COAL AGE

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Wanted: A Fair Stand Against Unfair Wage Advances

By R. Dawson Hall

WHEN the self-serving politicians have failed — as fail they certainly will— to lower the cost of living by their futile practice of treeing the wrong cat, then at last we shall save the state by putting in an entirely new set of officials and lawmakers of every shade of political opinion. The two chief classes of profiteers are the members of certain unions and the farmers

So far we have left both entirely alone and gone after excellent people who have for some years, at least, kept reasonably free of profiteering. Our anger seems to lead us to make the most determined effort to convict the least guilty, and the politicians seem bent on satisfying public clamor by leading us in the ridiculous chase. When the public has learned its mistake, as it eventually will, it will look for better leaders.

It is not likely that the new representatives of the nation will prosecute the particular unions that are to be reprobated, nor will they harass the farmer. In fact, no one wants them to do either. All anyone desires them to do is to face facts as they are and prevent the union profiteers from profiteering in any new and undesirable manner. The farmers will probably soon lose the power to demand any more than their products are worth. Theirs has been, in any event, a more creditable profiteering—done without violence, threats or combinations. They have merely accepted the high prices offered them, as honest men are always prone to do.

But the union profiteers have not been content to wait on the supply and demand for labor to settle its value. There are unions that have in no way profiteered — which have not by threat of strike at any time sought or obtained wage increases out of proportion to living cost. Those that are doing so now must be curbed. We ask nothing of the politicians but to stand by, when capital firmly and determinately refuses to permit them to press for such new privileges and wages as will put a ring through the nose of the non-union man and lead the country to bankruptcy and Bolshevism.

Costs of living must continue to rise if wages are to continue to advance, and rise they must if the unfairly rewarded non-union and honest union man are to receive what is due them. This is not a quarrel between capital and labor, but between irresponsible and responsible labor, between profiteering workingmen and workmen who believe in relying on supply and demand, between bandit workmen and the workmen with a keen sense of the duties of the citizen.

A pretty mess we are in. If rents do not rise, houses will not be built because the landlord of the new house cannot make even a bond rate of interest if he has to compete with the landlord who built his house before the war.

But as most landlords have borrowed money on their properties, they have invested only about a quarter to a half of their cost. Just at present the cost of building has gone up roughly 75 per cent. The land cost, which forms perhaps barely a third of the combined cost of building and lot has at present gone up but little. The value of the whole property has therefore risen about 50 per cent. Eventually rents will probably rise to at least that level. They may go higher as costs of building increase and as owners of land discover that the good 100-cent dollars they invested have been juggled till they now only represent 69 cents, or probably only 50 cents, in buying quality.

Though rents and values only rise 50 per cent., a man owning a half equity will make 100 per cent. and a man owning only a quarter will make 200 per cent. on his money. Many more houses will have to be built if the people are to be sheltered, and this will doubtless put up the wages of building labor and probably raise still further the costs of material. In consequence, the owners of pre-war buildings will be assuredly gainers of 50 per cent. on their investment and may make 200 or even 300 per cent. if the wage rates are given many more upward revisions and if the buildings when the war commenced were heavily covered by mortgages.

To prevent the unearned increments, the results of excessive wage agitation and currency inflation, let us keep a firm hold on the wage scale, resisting boldly any attempt to increase wages out of proportion to the increased cost of living. Just at present we should look askance at all employees who wish to increase their remuneration more than 70 per cent. above the pre-war figure.

Mining and Metallurgical Industries to Help Dedicate Bureau of Mines Laboratories

NEW MILLION DOLLAR LABORATORIES OF THE UNITED STATES BUREAU OF MINES AT PITTSBURGH, PENN.

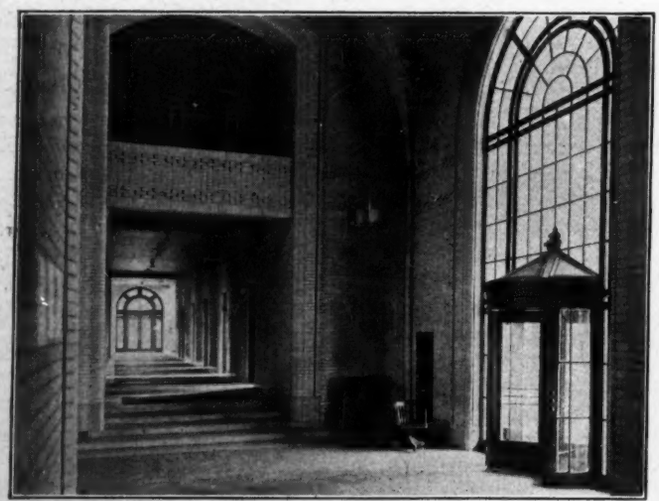
First-Aid and Mine-Rescue Contests Are to Be Some of the Features of a Large Program Arranged by the Bureau of Mines and the Pittsburgh Chamber of Commerce. Teams from All Parts of the Country Have Already Signified Their Intention of Participating in the Events

THE new laboratories of the Interior Department's Bureau of Mines at Pittsburgh, costing more than a million dollars, are to be dedicated on Sept. 29, 30 and Oct. 1 with appropriate ceremonies in which the mining and metallurgical industries of the country are to take part. The program for the three days has been arranged by the Bureau of Mines in cooperation with the Pittsburgh Chamber of Commerce and promises to be both interesting and instructive.

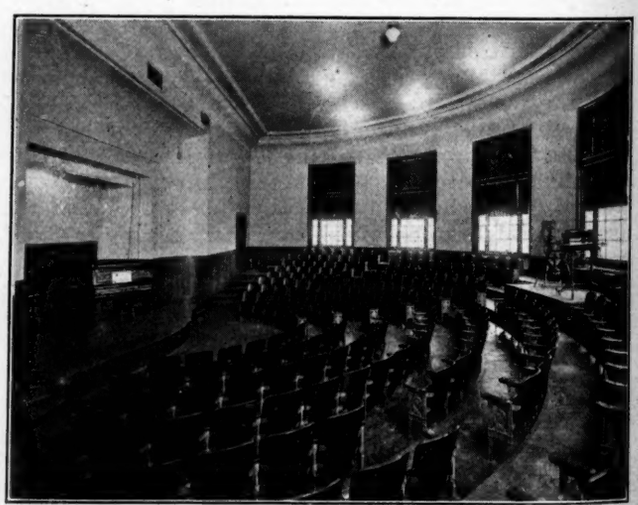
One of the biggest features of these ceremonies will be the nation-wide first-aid and mine-rescue contest to be held during the last two days. Already nearly 100 teams from the coal- and metal-mining companies throughout the country have entered the lists, and more are expected by the time the entries close.

On Oct. 1 there will be a holiday for the miners of the Pittsburgh district, and thousands will attend this national meet and witness the awarding of the prizes to the winners.

In addition to the usual prizes for these contests, the Joseph A. Holmes Safety Association, an organization created in 1916 in honor of the memory of the first director, for the purpose of giving recognition to persons who had performed meritorious and heroic deeds in the saving of human life in the mining and metallurgical industry, or who had developed some safety appliance to further the saving of life in those industries, will make its first awards. Dr. Van H. Manning, president of the association, will announce the list of recipients of diplomas and medals, and recite the deeds for which they are presented. The committee on awards has recommended that twelve gold medals be awarded, all for heroic deeds performed by miners in coal and metal mines in efforts to save the lives of other fellow workmen. In several instances where men lost their lives in endeavoring to save others, the medals will be awarded to their nearest living relative. It is intended that this organization serve the mining industry in much the same manner as the Carnegie Hero Commission attempts to serve industry generally.



ONE OF THE MAIN CORRIDORS OF THE BUREAU OF MINES LABORATORIES



AUDITORIUM WHERE SCIENCE STUDENTS HEAR OF IMPORTANT DISCOVERIES

Speaking of the accident conditions generally in the mining industries, and of the outlook, Dr. Van H. Manning, Director of the Bureau of Mines, says:

"I am often asked, 'What has the Bureau of Mines accomplished in the saving of human life in the mines?' It is difficult to say that so many miners might not have been killed if it were not for the Bureau of Mines, there are so many varying factors involved. I may say, however, that if you consider the prevailing average death rate in the mines for a period of years before the Federal Government took up this work, and compare it with the average fatality rate since the Bureau was created, you will find that 5000 less miners have been killed. In other words, had the old fatality rate been maintained through the last few years 5000 more men would have lost their lives.

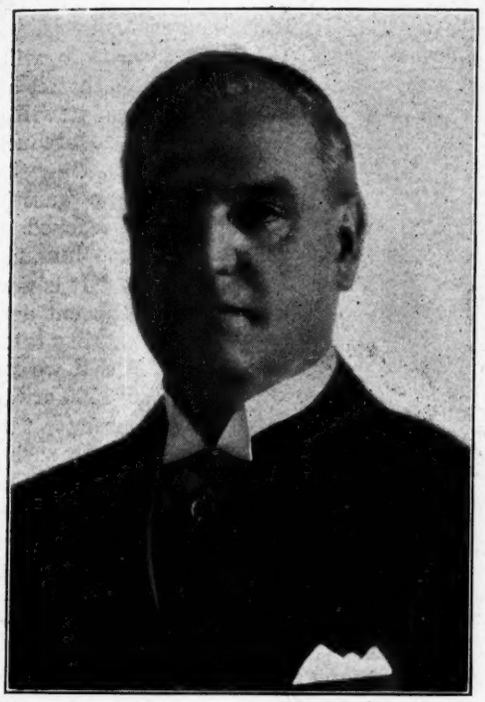
"I am of the opinion that the statement of 5000 lives saved is a conservative one, for it must be remembered that the situation was gradually becoming worse in the mines, and who knows that there might not have been 7000 or 8000 lives lost. We also have to take into consideration that, thanks to the many improvements in life-saving methods and the greater understanding of the causes of accidents, that the tide has definitely turned and that this saving of 5000 human beings within a few years will be accentuated and increased as the years roll on until we can show several times 5000 lives saved.

"Whatever statisticians attempt to make out of these figures, however they may endeavor to twist them, it is indeed a glorious record of human progress. Five thousand lives saved! Perhaps 2000 less widows! At least 3000 children who still have fathers.

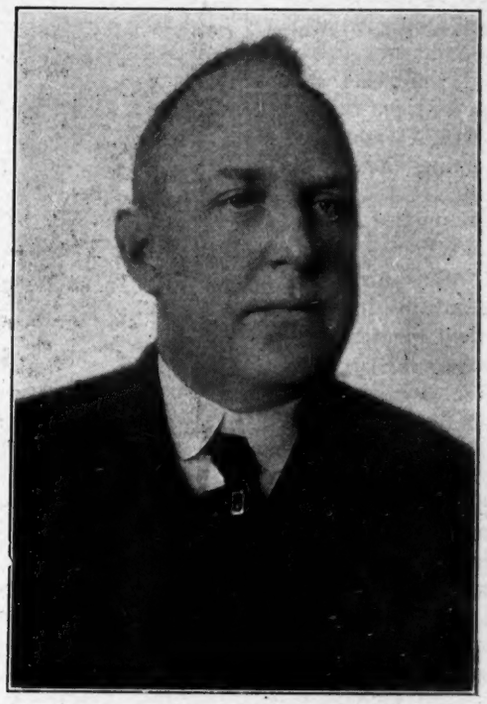
"Take away all the other manifold duties of the Bureau of Mines and this one accomplishment is worthy of all its costs to the Government since its establishment, and for years to come. And when I referred to this as an accomplishment, I do not mean that the Bureau of Mines deserves all of the credit. It was, however, the agency that picked up the isolated, sporadic efforts of a few well-meaning men and companies, and welded them into a great national movement for greater safety in the mines. It is true it at once gained the coöperation of the miners, the mine operators, the state mine inspectors and others, and without these the Bureau of Mines would have been almost helpless.

"It was in 1911 that the Bureau held under its auspices a great, national first-aid and mine-rescue meet at Pittsburgh, Penn., which was attended by 22,000 miners. The slogan of that meet was 'Safety First,' and that was the time that the slogan, since internationally famous, became the national battle cry of this humanitarian movement. I understand that a steel company had before that time used the slogan locally, but to all intents and purposes the Bureau of Mines was responsible for its becoming a great world slogan.

"Not only was 'Safety First' immediately adopted by the mining companies—you will see it posted about hundreds of mines and also on their equipment—but it was also taken up by the railroads and by industrial plants of the country until it became a national byword. Safety organizations appeared everywhere; committees of the men were formed in the mines and shops, and determined campaigns were inaugurated to reduce the number of deaths and injuries in the industries. In some of the big establishments the committees printed little papers for the men, giving the progress of the life-saving work and pointing out accidents that could perhaps have been avoided. Safety inspectors and committees were chosen; the railroads built up elaborate safety organizations, and divisions vied with each other as to which could produce the cleanest records. There



DR. VAN H. MANNING
Director, United States Bureau of Mines



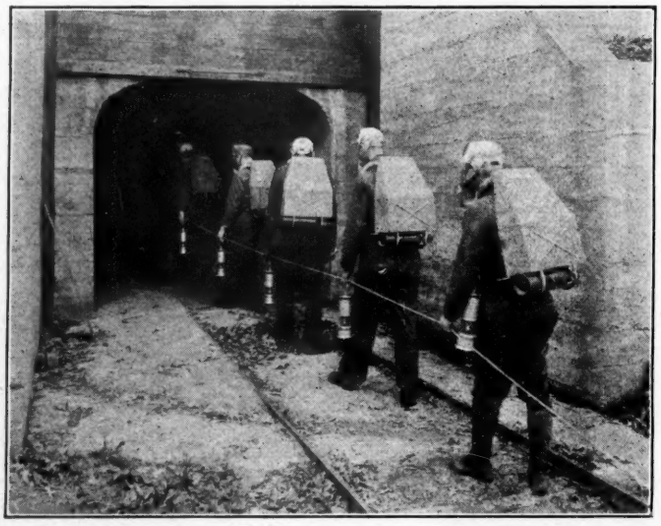
D. A. LYON
Superintendent of the Pittsburgh Station

was a spirited rivalry between these committees, and the records of the different establishments began to show results in lives saved and men saved from suffering. In quite a number of mills and factories and railroads there was a reduction in the fatalities of more than 50 per cent. Further improvement was slower, but the original gains were made and added to.

"Just how many thousands of lives were saved may never be known, for there are no statistics that adequately cover industrial accidents; but we do know that the Bureau of Mines and its associated agencies started a movement that not only spread throughout the entire United States, but it also reached the other countries of the world with an equally good effect. And it all started with the modest mine safety meet we held in Pittsburgh in 1911.

"Since that time, the Bureau has gone on its way, improving its methods, interesting the miner in his own safety and that of his fellowman; doing what it could to point out to the owners of the mines the dangerous places that could be avoided and making recommendations as the result of its experiments looking toward still greater safety.

"Today the Bureau of Mines maintains in every mining field of the country a mine-rescue car fully equipped with modern life-saving apparatus, that responds to disasters and assists in the rescue work; in the meanwhile visiting the mines in its district and giving the miners instruction in both mine-rescue and first aid to the injured. As a result there are several thousand miners throughout the country who are expert in the use of the oxygen mine-rescue apparatus and who are familiar with the most modern methods of life saving. Besides more than 50,000 miners understand first-aid-to-the-injured work as well as regular hospital corps. All of these men have been trained by the Bureau of Mines.



DEMONSTRATING THE NEW AMERICAN BREATHING APPARATUS PERFECTED BY BUREAU OF MINES ENGINEERS

Mine Disasters Becoming Fewer

"Happily, great mine disasters have been becoming fewer and fewer as the men come to a better understanding of their causes. Nevertheless, they do happen, and one thing that the Bureau has preached is that upon such a visitation there shall be a more orderly and systematic method of rescue work, for it has been demonstrated that life can be saved in indirect ways. The Bureau has endeavored to tell the miners that in a great catastrophe, it is often better for entombed miners to barricade themselves in, keeping the poisonous gases out of their working place and waiting for relief. In this manner 42 men entombed in a mine for four days were recently rescued, the men even being able to walk out of the mine.

"We are now hopeful that this coming nation-wide first-aid and mine-rescue week in Pittsburgh will give the safety movement another such impetus as the meet in 1911. If its influence is but one fraction of the former meet, the Bureau will be amply repaid.

"As far as the mining industry is concerned, we are not content to rest on the progress made. There are now more than a million miners in the United States, and each year more than 3000 are killed in accidents and a quarter of a million injured. Taking the cold, business calculation of the state compensation commission and eliminating the suffering and sorrow of 3000 killed each year, the economic loss from these fatalities alone is $12,000,000 a year, for these commissions are paying an average of $4000 for every life lost. This is a terrible toll for one industry to pay each year in providing the coal that furnishes the power of the nation and warms the homes of the people. It is hard for us to realize that out of every mining camp of 1000 three are sure to lose their lives before the year is out.

"Mining will always be an extra-hazardous business; there will always be dangers inherent to the industry that will ever take a death toll and beyond which it will be impossible to reduce the death rate.

"But the question is, 'Have we reached that irreducible minimum?' I think not. It is my belief that we can cut down the present fatality rates fully one-half; that we can save each year 1500 of the 3000 killed every twelve months. Isn't such a goal worth striving for? A prize of 1500 human beings saved to life, happiness and their families each year. This may seem like one of those ideals impossible to attain, but so did the saving of 5000 lives already accomplished through similar efforts. Nevertheless that is our goal, and today we see more definitely its attainment than the progress already made when we started this work. The causes of these fatal accidents are now much better known than heretofore. Operators and miners are giving much more thought to the dangers of the mines and the wideawake among them have installed more modern safety devices. The industry is not now groping in the dark on some of those causes that were more or less mysterious some years ago, such as the dangers from coal dust. Through the Experimental Mine of the Bureau, mining men and miners both have a keener understanding of the dangers of coal dust, and they have also learned how to care for this menace that has cost so many lives.

"In the mining industry at least a human life is much more valuable than ever before, and I believe that can be said of all the industries, especially those of the United States. The recent world holocaust in which 7,000,000 men made the supreme sacrifice would seem to belie my statement; nevertheless, it is true as seen in the great advances in safety work, the millions of dollars spent in safety devices and the humanitarian work of the different state compensation commissions. The day of the ambulance chaser and those ghouls that

preyed upon the widow beset with grief over the loss of her husband have happily passed away. The state now steps in and sees that the widow and orphan are protected, and that alone is worth all the fight that we have endeavored to make. I do not say that the Bureau of Mines is responsible for these state compensations, but I do know that these commissions came after the mining industry started its great man-saving drive, and that the disclosures of the conditions in mining furnished the states with facts that favored the establishment of these commissions.

"Cut the mine fatalities in half."

The dedication ceremonies promise to bring to Pittsburgh for the three days the most prominent mining and metallurgical men of the nation, not alone interested in the safety-first movement, but also those connected with the allied industries that use the products of the mines.

The Bureau of Mines, in coöperation with the Pittsburgh Chamber of Commerce, has already completed an elaborate program of events which includes the presence of high Government and State government officials besides the leading men of mining thought in the country. The ceremonies proper open on Monday morning, Sept. 29. The evening before, Sunday, Sept. 28, there will be reception committees at the various leading hotels to receive the guests. On Monday morning the new laboratories at 4800 Forbes St. will be open for inspection, and at 10:30 o'clock the dedicatory ceremonies will be held on the lawn in the rear of the laboratories, with Dr. Van. H. Manning, Director of the Bureau, presiding. After invocation by Dr. S. B. McCormick, chancellor of the University of Pittsburgh, there will be an address of welcome by Hon. E. V. Babcock, mayor of Pittsburgh. Response will be made by the Hon. Franklin K. Lane, Secretary of the Interior, to be followed by addresses by Horace B. Winchell, president of the American Institute of Mining and Metallurgical Engineers; John L. Lewis, acting president of the United Mine Workers of America, and the Hon. William C. Sproul, governor of Pennsylvania. The formal ceremony of handing over the keys of the building by Secretary Lane to Director Manning will follow.

After luncheon at the Bureau of Mines buildings, the guests will board special trains on the Baltimore & Ohio R.R. to the Experimental Mine of the Bureau of Mines at Bruceton, Penn., 14 miles from Pittsburgh. Upon arrival there a prearranged explosion of coal dust will take place in the Experimental Mine as a demonstration to the visitors, and after that there will be an inspection of the mine and the explosives-testing plant, the guests returning to the city at six o'clock in the evening. At 8 p.m. there will be a general meeting at Carnegie Music Hall under the auspices of the Pittsburgh Chamber of Commerce, with an address by Secretary Lane, an organ recital by Dr. Charles Heinroth, and a moving picture prepared by the National Coal Association, "The Story of Coal," will be given its first presentation.

On Tuesday, Sept. 30, the new laboratories will be open for inspection by the guests for the entire day, and at 2 p.m., the elimination contests in the national safety first-aid and mine-rescue meet will be held at Forbes Field, also the awarding of the state championships. At 5 p. m., at Forbes Field, there will be a demonstration of the explosibility of coal dust, and at 8 p. m. the Chamber of Commerce will present a pageant typifying the spirit of the mining industry, with music by the band of the Carnegie Institute of Technology.

On Wednesday, Oct. 1, at 9 a. m., there will be a final mine-rescue contest by the ten successful teams of the previous day at Forbes Field, with a presentation of the national cups and prizes. At 2 p. m. the announcement of the J. A. Holmes Safety Association will be made by Dr. Van H. Manning. At 2:30 p. m. the final first-aid contest will be held. The participants will be the 20 best teams of the previous day, the contest being for several gold cups and prizes. At 5 p. m. there will be a demonstration of a coal-dust explosion at Forbes Field, the events closing with a smoker at the Chamber of Commerce in which the prizes will be awarded and speeches made.

The Honorary Committee in charge of the dedication of the Pittsburgh station is as follows: George S. Oliver, president, Pittsburgh Chamber of Commerce; John F. Herron, president, City Council of Pittsburgh; Harry N. Taylor, president, National Coal Operators' Association; John L. Lewis, acting president, United Mine Workers of America; Horace B. Winchell, president, American Institute of Mining and Metallurgical Engineers; Hon. Franklin K. Lane, Secretary of the Interior; Dr. Van. H. Manning, Director, Bureau of Mines; Dr. S. B. McCormick, chancellor of the University of Pittsburgh; Dr. Arthur A. Hammerschlag, president of the Carnegie Institute of Technology; Dr. S. W. Stratton, director, Bureau of Standards; Dr. R. F. Bacon, Director, Mellon Institute; Seward E. Button, chief, Department of Mines, State of Pennsylvania; Dr. D. Van Schaack, president of the National Safety Council; T. A. O'Donnell, president, American Petroleum Institute; Mortimer E. Cooley, president, American Society of Mechanical Engineers; Fayette S. Curtis, president, American Society of Civil Engineers; J. A. Capp, president, American Society of Testing Materials; Dr. William H. Nichols, president, American Chemical Society; Calvert Townley, president, American Society Electrical Engineers; G. H. Neilson, president, Engineers Society of Western Pennsylvania; Dr. W. D. Bancroft, president, American Electro-Chemical Society; R. T. Stull, president, American Ceramics Society; E. N. Zern, president, Coal Mining Institute of America; James R. Angell, chairman, National Research Council.

Coal Mining in France and Scotland

Some time before the war, writes "Engineer" in the April 19 issue of *Everyman*, I had an opportunity to compare the working of collieries in the French mining district of Pas-de-Calais and some of the Scottish coalfields, and in view of the Coal Commission, the following general impressions may be of public interest.

Coming from a French mining district, particularly one of the wealthy and well-managed districts of the Nord and Pas-de-Calais, the first impression of a Scottish mine is not favorable. Things seem to be scattered about and left to take care of themselves. One misses the studied arrangement of the buildings, the neat appearance of the engine rooms, the bright, regular setting of the engines, the clock-work regularity of the working of the pit. There is a do-as-you-please manner about every detail of the work, from the lifting of the coal to the very attire of the workmen, whose

rough suits, black shirts and ragged caps compare very unfavorably with the blue overall and cork-helmet of their French comrades.

The pit manager was quite a contrast with the Ingénieur des Mines who had guided my steps in B———. The Frenchman came from the Ecole Nationale Supérieure des Mines. He had gone through highly mathematical courses in order to pass the entrance examination, then had followed the theoretical teaching of the school in the beautiful rooms of the Palais Vendôme, whose high windows open on to the Luxembourg Gardens. He was a highly cultivated man, both scientifically and in the more general way in which a Parisian mind is cultivated by the mere influence of the great city. The practical side of his profession he had mastered in about a year's training under his predecessor in the management of the pit. Every morning he went down and visited a sector of his mine, discussing the details of its working with his foremen, observing the geological and other sides of the outlook, and settling questions of price and propping with the men. The visit lasted for about three to four hours, and was so calculated that the manager surveyed the whole of his mine every month. In the afternoon, the manager took up the office part of his work, the main part of which consisted in studying and discussing the cost price.

The Scottish pit manager was a sturdy workman hardly above the level of an ordinary hewer. Of mathematics he had none. He knew nothing about engines, the working of which was entrusted to a different specialist. His knowledge was purely empirical and he was unable to give a clear explanation of most of the things he did or had done in the pit. He had no reading and knew no other methods than those of the district. He could talk of nothing but coal mining. He kindly consented to come down the pit to show his mine to me, but he explained that he usually went down but once a month except in case of accidents. And it struck me as the crowning touch of the contrast that he went down in the same clothes he was wearing and did not change when he came up again; nor was I expected to require a bath before leaving. There were no baths on the premises.

The French mine was run at full speed. The working of the cage was timed beforehand to the second, and the number of trucks lifted per hour carefully checked. The movements of the trucks at both the top and bottom levels were planned so as to get the maximum result from the work of the men who served the lifts.

The Scottish mines did not seem to attach so much importance to the working of the cage, and a loss of minutes, nay, half-hours, was not looked upon as a serious incident in the day; but I was unable to ascertain whether this was due to lack of coördination between the lifting and the hewing arrangements, or to the fact that the mine had more lifting power than necessary, or perhaps to slackness in the market. The methods in use were far less economical than in France. Coal which it did not pay to lift was left at the bottom, perhaps forever. Pillars of coal were left here and there instead of propping. I observed places where propping was obviously defective, and the pit manager, whose attention I called to the fact, explained that it was for the miner to see that it was properly carried out. As the time devoted to propping had to be taken from that given to hewing, and the men were paid by the ton, the effect of this system may be easily guessed. Fear of accidents is hardly a consideration with miners, since familiarity breeds contempt.

Much more was left to luck in Scotland than in France. The working of the cage was carefully regulated in France in order to avoid personal accidents. Thus, while lifting or lowering men, two enginemen were required by law at the levers. An automatic safety brake prevented the cage from climbing too high—an accident not unusual when such a precaution is not taken and one which always ends in breaking the cage and precipitating it to the bottom. The cable—the flat hemp cable which the French consider safer than the steel ones generally in use in this country—was carefully tested every two or three months and records were kept of these tests. The tail-end next to the cage, the most hard-worked part of the cable, was cut off for this operation, so that the results obtained were always on the safe side. I should add that the size and thickness of the cable are calculated beforehand so as to realize the maximum safety with the minimum possible weight, for deep mines require a considerable length and therefore weight of cable, which has to be lifted every time, and any undue overweight of cable represents a relatively high restriction on the amount of coal that can be lifted. Moreover, the walls of the pit and the rails of the cage were inspected once a month by the pit manager, who went down standing on top of the cage which lowered at a very slow speed, and knocking with his hammer every yard of wall. I saw none of these precautions in Scotland, and my questions elicited from the pit manager a complete ignorance about the use, utility, or even existence of any of them. He seemed, however, to know about the safety brake for limiting the rise of the cage, and, indeed, I saw one in a mine (a South Wales mine, I believe); but he deprecated their use on the ground that they tend to weaken the attention of the engineman. As for the cable, he trusted to "a good strong cable, provided by a sound safe firm." Its size was chosen "on the safe side," that is, unnecessarily thick and heavy. Empiricism seemed to be the rule everywhere. Smoking was allowed at the bottom, and ordinary lamps were used.

Both the French and the Scottish collieries visited were privately owned and worked, yet the contrast was great. This contrast was, of course, purely a matter of national character. There was on the one side the empirical tendency of the Briton to let things go by themselves, and to work by rule of thumb; and on the French side, the love of theory and scientific study and the national tendency toward foresight and regulation.

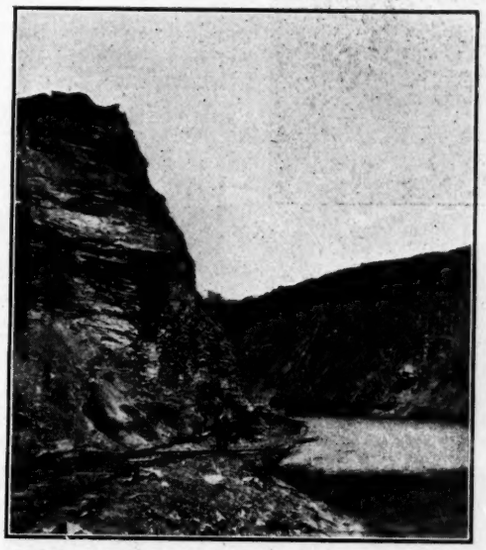
Nothing could better illustrate the differences here set forth than the contrast in social status between a mining engineer in France and in this country. A French Ingénieur des Mines is at the very top of the ladder of social prestige. The Inspection of Mines is entrusted to the body of Government Engineers called Ingénieurs au Corps des Mines, who are the pick of the basket of the Ecole Polytechnique. Most of the great names of modern French science belonged or belong to this corps. Henri Poincaré, the mathematician, was one of them. The root of the difference lies perhaps in that to the French mind business is a science, while to the British mind, science is only to be respected when it means business.

A Small Stripping with Heavy Overburden

By Donald J. Baker
Pittsburgh, Penn.

OBTAINING a fair return from a stripping mine where the overburden in places reached a thickness of 72 ft. has been the problem of C. M. Mayer, general manager and superintendent of such an operation near Presto, Penn. The plant in question is that of the C. P. Mayer Brick Co., and embraces a tract of 37 acres out of some 300 acres owned by the above company. The remaining coal is under development by a drift mine.

The coal is that of the Pittsburgh bed and runs in thickness from 5 to 11 ft. The thicker part of the seam lies under the heavier covering from where it decreases with the overburden, but the average is 5 ft. A creek runs through the property and bounds the stripping operation on one side. This makes an additional drainage problem when it is considered that the coal is in places 12 ft. below the level of the creek bottom. Two Bucyrus steam shovels are in operation. One is a 225B, 90-ft.-boom type handling the overburden, while the other is a 35B, 1½-yd. machine for use on the coal.



VIEW UP THE CUT, OVERBURDEN SHOWN ON LEFT AND SUMP ON RIGHT

The first cut about 100 ft. in width was made around the outer edge of the tract away from the creek. Development was rapid at this point as the covering never exceeded from 5 to 30 ft. in thickness with a comparatively shorter haul to the tipple. Western bottom-dump cars were used for loading at the shovel. These had a capacity of 8 tons and standard-gage equipment was used throughout. A later use of sideboards on the cars afforded a capacity increase up to 10 tons.

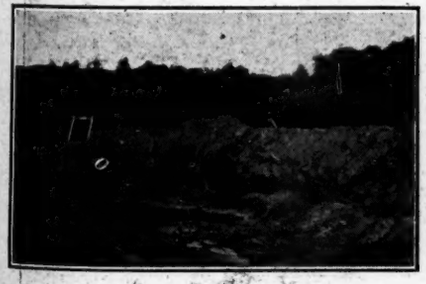
Two locomotives are in use: one a 42-ton Vulcan and the other a 30-ton American. The cars as they are loaded are removed to a siding by one of these dinkeys, which also places the empties at the smaller shovel. From this siding the other locomotive takes them to a point within easy reach of and on a slight grade to the tipple.

As the large shovel moved forward toward the creek, the thickness of covering increased. When an overburden of 72 ft. had been reached, a fault in the bed was discovered running transversely to the progress of the development and raising the elevation of the coal approximately 10 ft. No corresponding thickness of overburden was noted and there is little doubt that the geological condition encountered aided materially in the development at this stage of the operation. Progress to a point within 100 ft. of the stream was slow but commercially warranted, as the coal there ran 11 ft. in thickness. From here a sharp turn was made to conform to the outline of the creek, and the present working is at the upper end of the property boundary line within striking distance of the original cut.

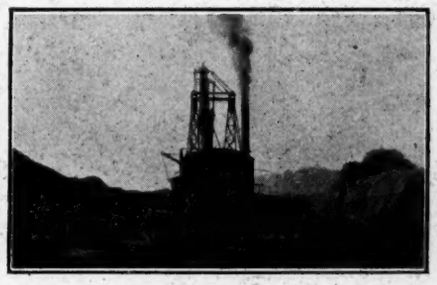
The present workings lie in places on a level lower than the nearby creek bottom. A series of ditches have been constructed that lead the water filtering through the rock strata above the coal to a sump located about 100 ft. to the rear of the small shovel. A 6-in. electrically driven Iron City centrifugal pump is employed to return part of the water to the creek. The greater portion, however, flows to a main pool located about 400 ft. down the cut. At this point an 8-in. electrically driven Iron City centrifugal pump is large enough to handle the overflow from the sump above, and keep the collecting water under control.

An average force of 40 men gives the plant a daily output of 1300 tons. Two Star drilling machines are in use at the smaller shovel for drilling the powder holes. From this shovel the loaded cars have a run of about 1000 ft. to a siding near the tipple. Three reinforced concrete piers support a trestle spanning the creek to this building. Both the trestle and tipple are of wood construction and both are simple in design. Two men suffice to handle the cars into the tipple whence the coal is dumped into cars without further process.

At the opening of the plant in 1917, it was necessary to move the larger steam shovel over the creek. As this stream has an average width of 50 ft. and a depth of 6 ft., it at first appeared necessary to construct a temporary trestle. This idea was abandoned, however,

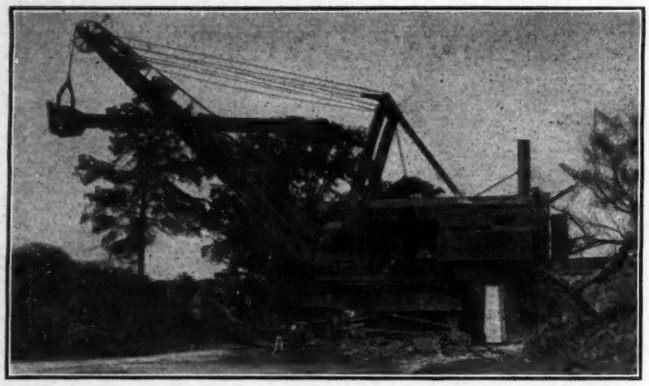


VIEW OF OPERATIONS; BRIDGE SHOWS NEARNESS OF CREEK



VIEW OF THE 225B BUCYRUS STEAM SHOVEL IN OPERATION

VIEW OF THE TRESTLE WITH TIPPLE IN THE BACKGROUND



THE SHOVEL IN TRANSIT ACROSS THE CREEK

in favor of trying to cross directly and saving the time that would have been consumed in the building of the trestle. The topography of the country at this point seemed to be favorable to this plan, as the ground sloped gently up from the creek on one side and only a small amount of grading would have to be done on the opposite side.

The shovel was brought to the edge of the stream and put in operation to dam up a portion of it, a passage about 15 ft. wide being left at the opposite side to serve as an outlet. Dirt and rock were then spread out until a footing about 15 ft. wide by 35 ft. long had been attained. On this heavy timbers were placed parallel with the movement of the shovel, thus furnishing substantial support for the ties and rails.

The shovel was then moved to a position halfway across the creek and again put in operation. An opening was made to the rear for the escape of the water and the outlet ahead dammed up. The movement of the shovel was then continued until the opposite side had been reached. A small amount of excavating was then done through the bank to permit of a better gradient.

With one exception, no difficulty was encountered in the entire movement of the shovel across the stream. As the rear trucks were leaving the foundation on the farther side of the creek, the added weight thrown on them from the movement of the front trucks up the grade of the bank ahead forced them through the dirt and down into the water. This necessitated jacking them up and the bringing into place under water of the supporting beams, after which the movement forward was continued without further interruption.

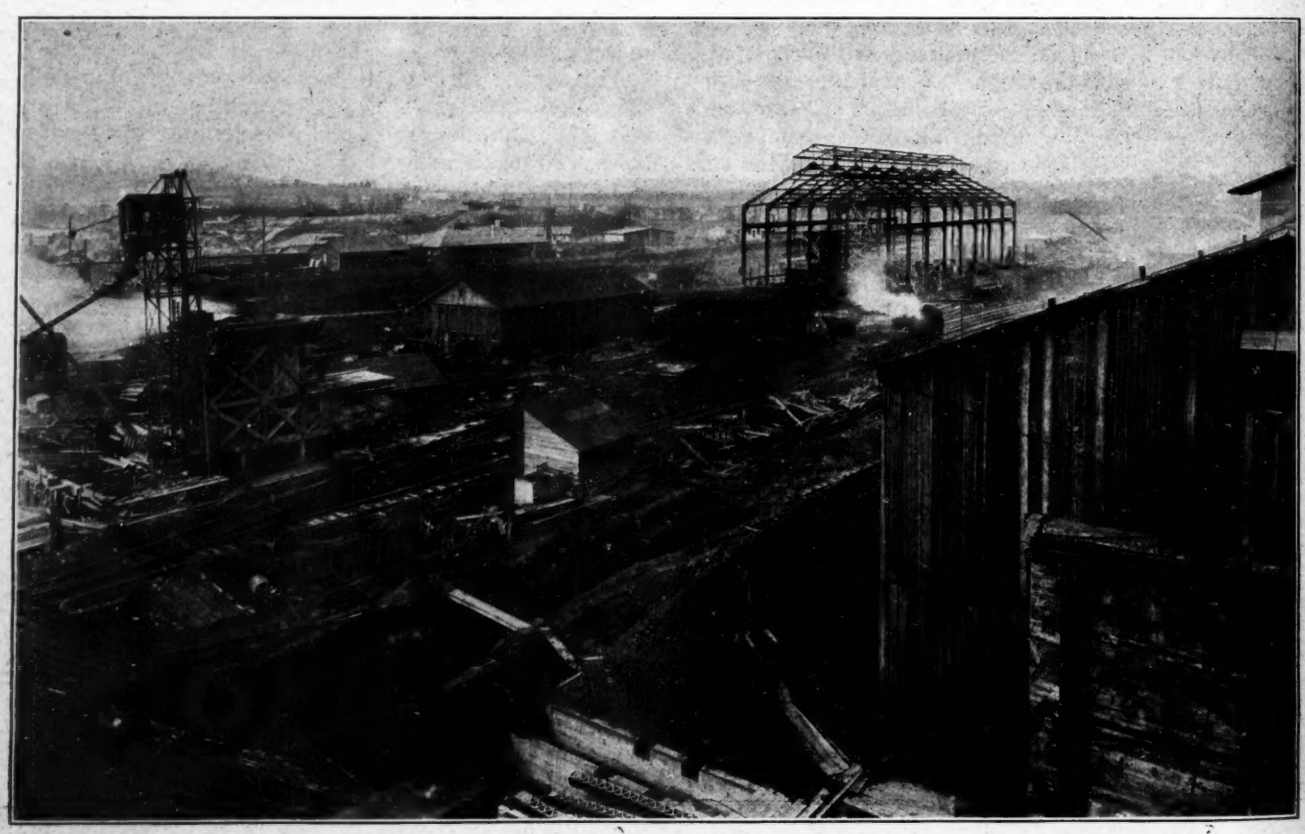
The Rainey-Wood Byproduct Coke Operation

By John L. Gans
Connellsville, Penn.

Interest in the Connellsville coke region centers more in the near approach to completion of the byproduct plant of the Rainey-Wood Coke Co., at Swedeland, Penn., than in any other plant of this character that has been constructed. This is not because of the size or extraordinary character or up-to-dateness of the installation, but because of the relation the Connellsville region sustains to the operation.

Heretofore byproduct installations, both merchant and furnace, have been built by interests outside of the Connellsville region, or by interests already owning and operating beehive plants in the region, directly or through the medium of a subsidiary corporation. In the case of the Rainey-Wood plant the relation sustained to the Connellsville region is wholly different, and altogether a new one in the annals of byproduct coking development.

The plant is being constructed and will be owned and operated by a corporation—the first of its kind—



BYPRODUCT COKE PLANT OF RAINEY-WOOD COKE CO., SWEDELAND, PENN., IN COURSE OF CONSTRUCTION

which represents, on one hand, an owner of Connellsville coking coal and an operator of beehive ovens, and on the other hand, an interest which heretofore has been a consumer of Connellsville beehive coke. The union has been effected by the creation of the Rainey-Wood Coke Co., representing the W. J. Rainey interests and the Alan Wood Iron and Steel Co. It is because the enterprise is the pioneer in such a combination of interests that the Connellsville region is somewhat more concerned in its progress than in any that have preceded it, particularly as to the possibilities that may lie with an extension of the plan to include other interests in a like amalgamation as one of the developments of the changing conditions in the coking industry.

The Swedeland plant, which is to consist of 110 Koppers ovens, of a capacity of 11½ tons each, is being constructed in two batteries of 55 ovens each, complete with byproduct recovery apparatus. The plant will have a capacity for carbonizing approximately 1900 tons of coal per day, or about 63,000 tons per month.

The plans of the owners are to make this plant a commercial coking operation, disposing of the furnace and foundry grades of coke throughout the territory adjacent to its location. The Alan Wood Iron and Steel Co. will use about one-third of the plant's output at its furnaces; the remainder of its requirements will be supplied by the W. J. Rainey interests from the Connellsville region. Provision, financial and otherwise, has been made for an ultimate extension of this plant to a total of 330 ovens. When that capacity has been attained the plant will be enabled to take care of a large part of the coke requirements of both furnaces and foundries in the Lehigh and Schuylkill Valleys.

That the plant will also have the character of a merchant operation will have additional interest to Connellsville region producers in that its entrance into the general coke trade will have the effect of curtailing the beehive-coke market to the extent represented by the byproduct tonnage the new plant may place outside of its own associated consuming interests. This will not be regarded as alarming, but it is significant of the trend in the industry, which for some time past has been evidenced by the gradual transformation of the Connellsville region from a coke-manufacturing to a coal-producing center. This transformation is apparently by no means complete.

Thoughts on Mine Electricity and Electricians

By M. S. Beddow
Scranton, Penn.

During an electrical mining experience covering almost 16 years, in which I have had to do with hundreds of peculiar and sometimes puzzling cases of trouble, I have often wondered how few mine electricians give a thought to the cause of these various difficulties and their why and wherefore. It is one thing to solve and repair a case of trouble when it crops up and quite another problem to satisfy oneself as to just what was the reason for the breakdown. Just how deeply the man on the job pries into the reason for a piece of machinery failing will determine what that man is going to amount to in his chosen profession.

It is this prying habit that makes one proficient in his calling and enables him at times to see things intuitively, almost by second sight as it were. And after all is said and done, the really proficient electrician is the one who is able to prevent, rather than repair, breakdowns, with their consequent loss in output. Especially is this true at the present time, when the demand for fuel is unprecedented in the history of the world.

As the difficulty of mining increases, because of greater distances to be traversed and smaller beds to be worked, machinery of all kinds will be turned out to overcome these obstacles. Invariably these are and will be electrically driven, so that it behooves the mine electrician to make himself just as proficient as it is possible for him to become. True, the duties are sometimes weighty and discouraging, but the realization that one has learned something new is in itself a high reward. And there is always something to learn when a new piece of machinery makes its appearance at the mine. The electrically driven air compressor, coal cutter, pump, rock drill, fan, etc., have features aside from the electrical that are interesting and well worth while learning something about.

Of the pump, for instance, one should know that it requires a certain horsepower to lift a certain number of gallons of water over a given head in a given time. This is almost as interesting to the electrician after a while as knowing that a certain pressure (voltage) will force a certain current (amperes) through a wire having a definite resistance (ohms). About the air compressor we can learn that it will operate so many jackhamers or other machines, while the means provided by the makers for taking care of the excess pressure in front of the piston when little or no air is being used, or when it is being supplied from the receivers along the line, is highly interesting. This pressure protection is automatic, and it is only necessary to say in passing that when the pressure of air in the receiver, or tank, close to the compressor exceeds a predetermined amount, valves are raised which allow this excess pressure, which would become dangerous, to escape to the atmosphere. The compressor, of course, stops compressing air and does not resume until the pressure in the receiver or tank falls off to a predetermined value, when those valves once more return to place and air is again compressed and sent into the receiver and thence to the line.

A number of years ago I had occasion to make a series of tests to determine just how much power various makes of coal-cutting machines required. These trials were conducted carefully with a view to determining whether or not it paid to mine certain beds in this manner. The results were surprising in that they showed quite conclusively that certain measures of coal which, to the naked eye, seemed identical, were far from being such. The current consumption was all worked out in watthours per square foot of undercut, and the power was so great in some of the measures that it was thought to be prohibitive; and the places were stopped. It was also revealed that the picks on the cutting chain had much to do with the amount of power taken. Vari-

ous shapes were given these picks, and after months of tireless experimenting a form was evolved and a certain position for the pick in the chain discovered that gave a maximum yield for a minimum amount of power.

Carrying experimentation beyond the cutting chain, some time was spent on the speed at which certain machines traveled across the face, and it was surprising how some of them were made to "stand up" after frrequent breakdowns, just by changing the gear ratios, which gave slower speeds. While the time of cutting a chamber was of course increased possibly four or five minutes, the yield in coal at the end of a given time was much augmented because the machine was kept in operation over a greater period. Less power was taken, too, and this last is an important item in these days of high prices.

Mine locomotives play probably the most important rôle in electrical mining, yet how few of the men who come into direct contact with them understand their actions and honestly endeavor to apply those first-aid measures which would often tend to keep them in continuous service? If the man on the ground could be made to understand, for instance, the absolute necessity of keeping the resistance, with the aid of which he gets the load started smoothly, in as nearly perfect condition as possible, how many less armatures would be burned out to say nothing of field coils, controllers, brush holders, blowout coils, etc.? To understand the reason for this one must of course know that it is the current that does the damage, and this is held to a minimum only when the armature generates sufficient counter e.m.f. (electromotive force, potential or voltage) to hold the applied, or line, e.m.f. to its proper magnitude. Now, to generate this counter e.m.f. the voltage from the line must be fed into the armature and field coils in easy stages, and this can only be done by the use of resistance. If this resistance is in good shape, just enough voltage will enter the armature and field coils to start the armature to turning smoothly, and it will not only start the load but will generate an e.m.f. which is counter, or in direct opposition, to that furnished from the line through the resistance. The counter e.m.f. is of course slightly less than the applied, and there is therefore enough potential left to develop torque and start the load.

As soon as the armature has attained full speed at any given voltage the controller is thrown to the second notch, this action cutting out more resistance. A slightly increased voltage is thereby allowed to enter the armature and fields, and the speed of the armature is increased sufficiently to generate enough more counter e.m.f. to hold the current taken from the line, through the resistance, to a minimum.

As long as this resistance is cut out in regular gradations, from the first to the last notch, the current in armature and field coils, as well as that in the resistance, does not reach a high peak and there is no undue stress on the equipment. I believe that 40 per cent. of the armature burnouts arise directly from resistance connected improperly or to "jumpered" panels. "Just to keep us going for the day," is the explanation. But, alas, it is not infrequently left in this condition for many days!

When it is considered that the heat given off by this excess current increases as the square of the current, it is not hard to see why the burnouts take place, and why every effort should be made to see that the resistance is kept in the best possible condition. In assembling the resistance for mine locomotives most electricians trust too much to memory and are liable to get too many, or too few, panels, or grids, in series or in parallel, as the case may be. If too many are in series the resistance offered by them is so high that the voltage allowed to pass through and into the armature and field coils will not be sufficient to start the armature and thus the load. If too few are placed in series, too much voltage is allowed to pass into the armature and field coils, and the panels themselves are destroyed by the heavy current that passes through them. The load is started with a heavy jar, and damage is done to every part of the locomotive.

Reasoning along similar lines will hold good for the parallel arrangement of the panels. The idea of this connection is to secure capacity; that is, to get enough panels together, or side by side, to handle the heavy currents when the controller is on the last notches and when the armature is developing almost full load torque. If too many are in parallel too much voltage is allowed through them, and heavy currents are of course taken from the line, and burnouts of armatures, field coils, controllers and resistances are the natural result. When 40 or 50 locomotives, all drawing current from the one station, are in this shape one can easily understand the disturbance created at the generators when all of these machines try to start their loads at the same time.

Thus, considered from all standpoints, the progressive electrician around the coal mines today must know more than how to tell the difference between series, shunt, compound, induction and synchronous motors. These, speaking plainly, are only the means to an end, after all. To be a success in the work he has chosen to follow he must learn something of the equipment driven by those motors. Moreover, he must also learn that there is no hard and fast line of demarcation existing between where the electrical repairs stop and where repairs to the other portion of any given machine begin.

Obviously it is easier for the electrical man to grasp these things than for the mechanical expert to solve the intricate electrical problems which come up from time to time. I mean by this that having shown more than ordinary ability in reasoning out things which have puzzled him electrically in the past, he will find the other side of the question more easy of solution in comparison.

Removing Old Babbitt Metal From Bearing Boxes

By T. S. Sherman
St. Louis, Mo.

Usually most, if not all, of the babbitt metal can be removed from a bearing box with a cold chisel and hammer. However, if this procedure is not feasible, the box may be placed in a forge fire and the babbitt melted out. The melting method is undesirable because of the probability of losing considerable of the metal. Where the bearing box is small, it is sometimes possible to melt the metal out of it by permitting the flame of a blow torch to play on the box, but, where the box is large, the blow torch method requires so much time that the forge process may be preferable. Where the blow torch is used, the molten metal can, as it drops from the box, be collected in a tray placed in proper position below the box.

Avoidable Degradation of Coal*

By Benedict Shubart
Denver, Colo.

FOR several months I have been compelled to make a careful study of a number of tipples on account of breakage of coal and complaints arising therefrom. Thus I know this is a subject of real interest and one well worth consideration. The designer in future must have a freer hand both in design and expenditure, for while some operators now grant this, there are many more, more than would be believed, who put first cost ahead of last cost—often to their sorrow. Recently an operator in Colorado called me in to make his failure of a tipple work. By way of introduction he said: "I couldn't let you figure on this job at first, for your price would have been a third higher than I paid." Then he went on to say that the tipple had cost him $25,000 to fix up so far, and he asked me to plan an entirely new outfit for next year's installation, to replace the present one from the ground up. And he still believes he saved money!

In tipple design, gravity is a convenient force to utilize, but it needs careful control. Coal preparation requires short, steep screens, the avoidance of falls and a slow movement of material down chutes. The box-car loader is often blamed for degradation for which it is not responsible.

Not long ago an operator said to me: "The trouble with the technical engineer is that he always attempts to make a complicated proposition out of a simple one." That is altogether too often the operator's attitude. The reverse is usually true in tipple design. The operator attempts to make a simple operation of what is usually a complicated engineering proposition. Entirely too often he assumes that inasmuch as there are three sizes of coal to load, all that is necessary is to place three tracks at about 16 ft. centers, build some screens over them, and run some chutes to some cars. If the chutes are too steep, it can't be helped—chutes are chutes, and gravity is gravity. But operators can not shut their eyes to the fact that complaints as to preparation cause expense of investigation, rebates, loss of trade and prestige. With a little more care put into the design of the tipple, a little more expense put into the machinery, legitimate complaints can be almost entirely avoided.

It has been difficult to get designers to realize the expense of breakage to the operator. To this carelessness the designer frequently adds a lack of knowledge of market and railroad conditions, two points that have to be studied carefully in tipple design. No two tipples can be exactly alike.

Avoidable degradation of coal occurs in mining, loading, dumping, screening and placing in railroad cars. In mining every good operator takes care to so produce his coal as to secure the largest amount of lump with the smallest amount of slack.

Outside the mine the first point where breakage can be avoided is in dumping. The goose-neck dump, or the ordinary end-dump cross-over type of tipple, is bad. The miner always puts his lump coal on top of the car. It is thus in position to get absolutely the maximum drop when discharged, and the resulting breakage is only tolerated because it happens to be customary. The rotary dump affords a much easier method of discharging the coal, and even here the usual installation of a rotary dump could be much improved were the expense justified. In shaft mining, the ordinary type of self-dumping cage with end gate car, using a weigh basket at the top, is also another excellent coal smasher. The cure for this is not easily found, although if the coal is weighed on the bottom, a large part of the chute and fall can be eliminated on the top. For proper sizing, the coal should be fed evenly onto the screens. For this purpose the reciprocating feeder offers the least drop and the least amount of degradation to the coal. It has another advantage in that it can separate the lump from the small coal, allowing the smaller sizes to drop onto the screen first. The ordinary type of apron feeder allows something like 18 in. of drop. This does not sound like much, but the amount of breakage it causes is entirely too great to be neglected by the careful operator.

After the coal is on the screen, and it is assumed that it goes onto the screen in small and regular amounts, it must get off the screen plate just as soon as possible. In other words, after the coal is sized, there should be no more screen for it to traverse. The average shaker screen is too narrow and too long. Wide screens of short length mean less degradation of coal. A perforated screen is substantially a coarse file. The coal must be crowded over this rough surface, and in being crowded over it degradation inevitably occurs. If the coal tends only to slide along the screen, there is strong tendency to catch in the perforations, leaving the larger pieces to crowd down the smaller ones, break them up, and force them through the screens. This costs the operator money, by giving him an unnecessary amount of the smaller sizes of coal. The cure lies in placing the screens at a good angle. A flat screen with a quick motion will afford a good-looking product, but it will also put an unnecessary amount of coal through the screens because of abrasion and breakage. The nearer the coal can come to rolling down the screens without actually doing so the less will be the degradation. My conclusions are that the screens should be wide, short, at a good pitch, fed with regularity and run at not too fast a speed. None of the breakage mentioned above shows in the screened coal, but the money loss is present just the same.

In getting the coal to the railroad cars, a process is encountered wherein probably more improvement can be made in avoidance of degradation than at any other point outside the mine. Our old friend "gravity," while active, is not reliable. It will not take weather conditions into account, the temperature, the degree of moisture, the amount of snow or ice on the chutes, the rusty chute of the late spring, or the polished chute of the early fall. Gravity will help us, but we cannot depend upon it to give us just what we want all the time. It needs help.

*Paper presented before the Rocky Mountain Coal Mining Institute, Spring Meeting, Salt Lake City, Utah.

Gravity is also a mighty active agent. Give it a little chance, even an extremely little chance, and it is surprising what it can do in putting speed into a piece of coal. A drop of one foot will put a speed of 480 ft. per minute into a lump of coal. That is not exactly moving slowly, and this point will be referred to later.

To show what extreme conditions an engineer runs up against, I have made a sketch of an actual operating coal tipple in one of the Rocky Mountain states. It will be observed that the coal drops onto a diverting chute, throwing it to either track. Slack coal is loaded in the middle track, and lump on each side, when egg is not being loaded on one side. The drop is bad enough when open cars are being loaded, but consider it when box cars are being loaded! There is an absolutely clean fall of nine feet before the coal touches the first chute. Inasmuch as this is a friable coal, it can be easily imagined why we were called in to try to better these conditions. Even with the best chute we could work out, we got a grade of more than 60 per cent.; and for handling large lump coal, without danger of clogging or breaking, we were obliged to devise a special type of conveyor. This machinery has not been put to work as yet, so I do not intend to describe it. If it operates as successfully as we anticipate, much will be heard of it later.

At a tipple in the Western states, where we were asked to put in box-car loaders, after examining the conditions we refused to put them in place until retarding chutes had been installed. These chutes we are now designing. It may be that in this case, too, we will be compelled to resort to the elaborate type of conveyor which we suggested before.

This tipple, by the way, was designed essentially for loading open cars. It contains an elaborate system of booms, is excellently designed, and operates smoothly. The designers, however, were not Westerners, and entirely failed to realize the necessity for loading lump coal into box cars in this territory, so that no attention at all was paid to the box-car chutes. This defect can be remedied, but at a heavy expense to the operator.

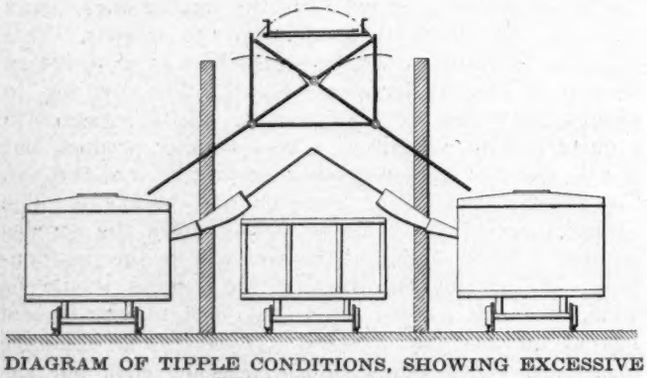


DIAGRAM OF TIPPLE CONDITIONS, SHOWING EXCESSIVE DROP GIVEN COAL

Without some kind of a retarder, not only would the coal be smashed to pieces but the box-car loader would not last long.

In general, box-car chutes are made too steep. They must be made steep enough to move the coal under all conditions, with the result that most of the time the coal moves too rapidly; in fact a great deal of breakage occurs for this cause. We find, then, that nothing is more necessary to retard the coal than to roughen the chute. Of course, if we roughen the chute actually, the coal will stop most of the time, so we accomplish the purpose by putting in a conveyor chute made with a strong short-pitch chain carrying square flights, so that it will keep the coal moving all the time, without permitting it to get away. This chute should be entirely self-contained. It should carry its own motor, be stoutly built, and be entirely separate from the rest of the tipple. The accompanying diagram will show plainly the general design of this chute. By reason of the small sprocket wheels, the drop at the end of the chute is absolutely negligible.

At a mine in southern Colorado I was called on to investigate excessive breakage in the preparation. The management here had a pretty fair combination of prac-

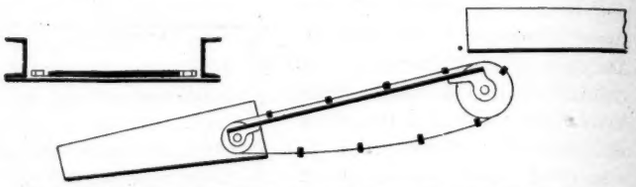


DIAGRAM OF CONVEYOR OR NON-GRAVITY CHUTE

tically all the troubles that a mine can have. The complaint made was about the small coal that was being loaded. An investigation showed that not 10 per cent. of the material being treated was sufficiently large to go over a 4½-in. perforated screen. Furthermore, the coal was badly shattered in mining. It was then dropped down a long chute. The chute was so long that a retarding conveyor had been installed, but for some reason this had been removed by the superintendent and a gravity chute put in.

The complaint originally was against both the nut and the lump box-car loaders. In company with the sales manager of the company, we made some tests. We stopped the lump-coal loader entirely and allowed the coal to simply run down, stopping it at the end of the chute. We then picked away the lump coal, and found that probably 15 per cent. of slack had been made by reason of the fall. The coal landed at the end of the chute with a rate of travel probably three times the speed of the box-car loader, and the sales manager himself acknowledged the unfairness of blaming that machine.

The complaint regarding nut coal was an equally unjust one, for practically the same reasons. The nut-coal chute was steep, had a reverse curve in it, and the amount of slack found in the nut before it struck the box-car loader was astonishing. The complaints against both box-car loaders were withdrawn, and we were asked to design proper chutes.

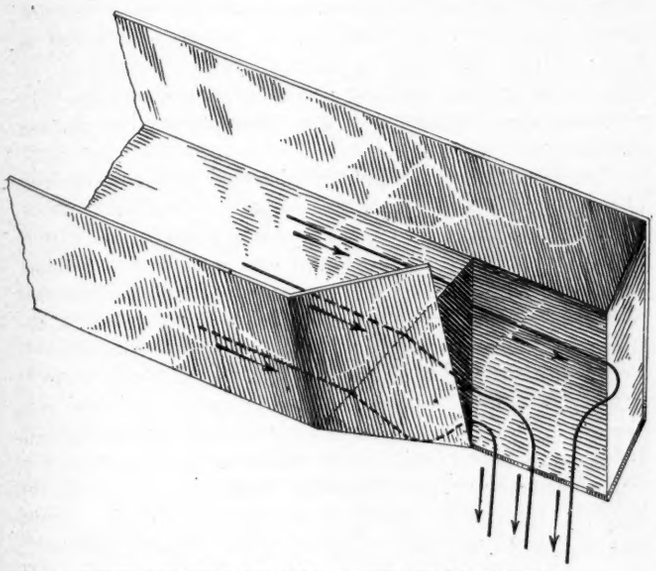
Where shaking chutes can be used, they are excellent. They can frequently be arranged so as to get considerable adjustment in height; they are easy on the coal and economical to operate. The retarding conveyors hitherto employed have utilized entirely too large sprockets. They give too much of a drop over the end, and attempts are now being made to build apron conveyors that will operate over very small sprockets. The standard apron conveyor is good for a loading boom, but hardly suited for box-car work.

Loading booms over the lump and egg tracks for loading the large sizes of coal into open cars are coming into such general use that they are no longer uncommon. They must be well designed, otherwise they fail of their purpose. They must be properly balanced, so constructed as to be rigid, must be easily operated, and must be provided with power-driven hoisting and low-

ering mechanism so that the men will keep them in their proper positions. It has been found that where hand winches are depended upon, the men will not go to the effort of using them. We now insist on providing a small electric hoist just like a little shop trolley hoist. These are operated by a small switch and are so quick and convenient that they are really used, not discarded.

Almost invariably, the screen discharges onto the loading boom at an angle. Frequently the loading boom is one rigid pivoted piece, so that the fall from the screen onto the loading boom is considerable on one side. Frequently side chutes are used from the screens, and these chutes are usually also ill-advised. The accompanying diagram shows an excellent way for working out a chute from a shaking screen for side discharge. It will be noted how each piece slides down the inclined surface, never at any point dropping nor at any point gaining appreciable speed. On the job where this chute was installed, experiments were made in the shop to determine the proper size and incline of the various sides of the chute. The results so far have been found excellent.

Where loading booms are installed, it is frequently necessary to pick the coal. It is a mistake to try to pick coal on the inclined portion. There should be a horizontal portion long enough to permit this operation to be carried on, and the movable portion should



SIDE DISCHARGE FOR A SHAKING CHUTE

be pivoted beyond this point so as not to interfere with the action of the pickers.

The essential point is to get the coal into the car without dropping it. This means that the action of gravity must be nullified as far as possible, and the coal conveyed or slid onto the box-car loader substantially without shock. This brings the coal to the box-car loader, and I know that in many cases this machine is blamed for much of the breakage that occurs long before the coal reaches it.

Standard loaders in general are of two types—the so-called apron variety that throws the coal a certain distance into the car, and the conveyor type that carries it gently and deposits it on the car floor. There are two makes of apron leaders, one of which extends something like 10 ft. toward the end of the car from the center door while the other projects inward about 11 ft. Both of these loaders use an apron similar to that of a picking table and throw the coal with a certain amount of violence. They can be raised or lowered or turned to any point of the car, and the speed is subject to control, so that a careful operator can load with no substantial breakage. In practice, however, the careful operator is hardly ever found, so that the breakage is usually more than it should be.

There is another type of loader rapidly coming into use—an extension loader—employing a flight conveyor, pushing the coal gently along, operating at a speed of about 250 to 300 ft. per minute, capable of being raised, lowered or pointed, just as is the other type, but having the additional advantage that, after the loader is in the car and the loading of coal is commenced, the frame may be extended to reach a point almost 20 ft. beyond the center line of the car door. While this loader is comparatively new the design is simple; it embodies little mechanism, and the machine appears to be a success.

With a good loader and proper chutes and screening appliances, an operator can be reasonably sure that any complaint concerning preparation is based on mighty poor grounds.

Legal Department

WAIVER OF MINING COMPANY RULES—A mining company's rule that cutting-machine operators shall sound the roof of their working places and do necessary propping before beginning work is rendered inoperative by the company assigning a special crew to work of preparing safe places for the operation of the machines. (United States Circuit Court of Appeals, Sixth Circuit, Marcum vs. Consolidation Coal Co., 257 Federal Reporter, 287.)

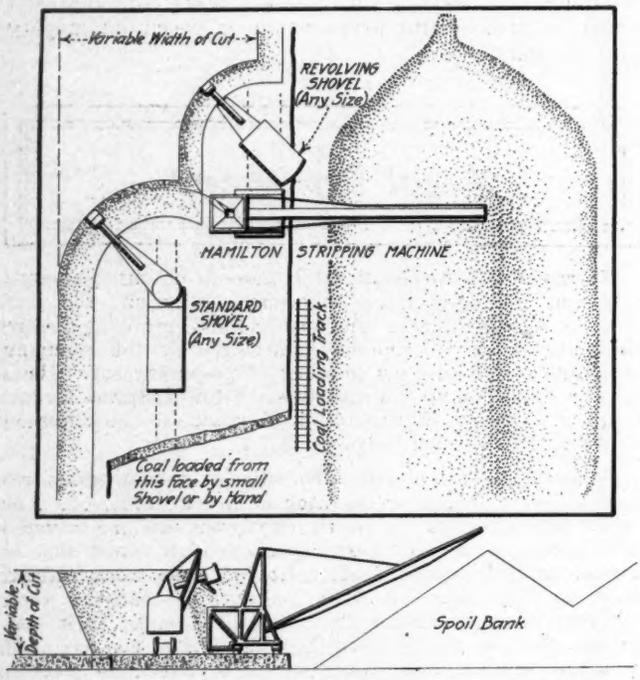
WASHROOM LAW VALID—The Illinois statute which requires "every owner or operator of a coal mine, . . . or other like business in which employees become covered with grease, grime and perspiration to such extent that to remain in such condition after leaving their work without washing and cleansing their bodies and changing their clothing would endanger their health or make their condition offensive to the public, shall provide and maintain a suitable and sanitary washroom at a convenient place in or adjacent to such mine . . . or other place of employment for the use of such employees," is a valid police regulation. (Illinois Supreme Court, People vs. Cleveland, Cincinnati, Chicago & St. Louis Railway Co., 123 Northwestern Reporter, 579.)

DEFECTS IN SIMPLE TOOLS—An employee of a coal-mining company injured in wielding an ax, through a slipping of the blade on the handle because of a defective condition of which he previously knew, is not entitled to recover damages. The reason upon which the legal rule requiring an employer to use reasonable care to provide his employees with reasonably safe tools and working place rests upon the employer's presumed superior knowledge of any dangerous conditions existing. But when a tool, such as an ax, is so simple that every person of ordinary understanding and experience must be presumed to know its use and understand incidental dangers, the rule is inapplicable. The employee, under such circumstances, is charged with that knowledge which exercise of ordinary prudence for his own safety would bring to him. The employer need not inspect such simple tools to discover existing defects, when it is readily discernible and can be readily corrected by the employee using it. (Kentucky Court of Appeals, Music vs. Consolidation Coal and Coke Co., 199 Southwestern Reporter, 1074.)

Hamilton Portable Stripping Conveyor

The portable conveyor recently placed on the market by the Hamilton Manufacturing Co., of Hamilton, Ohio, is designed to permit the use of the ordinary types of steam shovels for coal or other mineral stripping and loading operations. This conveyor solves the problem of disposing of overburden in an effectual manner and opens up a new field for the use of all types of steam shovels, enabling them to successfully do work heretofore requiring locomotives and train equipment. It also increases the efficiency of the shovel itself.

On a stripping operation where this machine is used, such as in removing overburden for the recovery of coal, the only delay to the shovel operation is the move-up time. In the accompanying illustration it will be seen that the location of the hopper of the conveyor reduces the swing of the shovel one-fourth as compared



TYPICAL OPERATION OF HAMILTON STRIPPING CONVEYOR

with the swing necessary to dump into a car. Two shovels are here shown, one a standard railroad steam shovel on railroad wheels and a smaller shovel working on the initial or contour of a stripping operation for the recovery of a 3-ft. bed of coal. The swing of the small shovel, which is opening the way for the conveyor, is also reduced when working in the thick side of its cut.

As the work of all shovels divides itself into 20 per cent. digging time and 80 per cent. swinging and dumping time, if we reduce the swinging and dumping time 25 per cent., we increase the shovel's efficiency 25 per cent.; and in obviating the use of dump cars and dinkey locomotives, we remove the inevitable delays in waiting, dumping, track shifting and spotting cars. This means 25 to 50 per cent. additional yardage moved per hour.

The use of the conveyor also fixes a uniform height for the elevation of the dipper. Another efficiency factor is thus secured that must not be lightly considered.

While the illustration shows a large railroad-type shovel and a revolving shovel in operation with the conveyor, it is practical and feasible to use smaller shovels in the same manner. Thus only one revolving shovel, or one railroad type non-revolving shovel, may be successfully employed. In the latter case the conveyor would be located parallel to the shovel.

The Loading Problem

BY A. M. YOUNG
Masontown, Penn.

Twenty years ago coal was largely mined and loaded by American citizens—foreign-born, perhaps, but citizens nevertheless. These same men every year taught thousands of their sons to follow coal mining as a means of livelihood, so that the supply of miners was approximately adequate to produce the coal demanded.

As immigration to this country increased, many of the immigrants entered the mines and large numbers of native or naturalized miners turned to other kinds of work. This loss was however not seriously considered until about 1910.

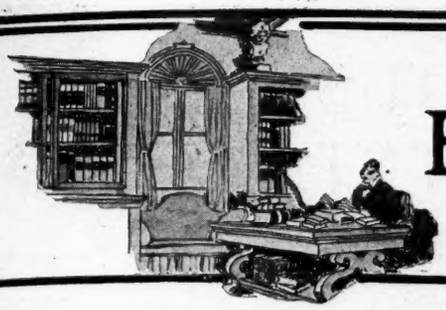
During this period coal-cutting machinery was gradually coming into use and doing a large part of the miners' work, so that when war was declared between the United States and Germany in April, 1917, the tonnage from mines using coal-cutting machinery was twice that obtained from mines operated on pick-work alone. But since practically all of the modern mines in this country today are using coal-cutting machines, we have to all intents reached the limit of production, with conditions as they now obtain throughout the mining regions.

What will the installation of more coal-cutting machines profit us if to operate them it becomes necessary to draw on the present force of loaders, the supply of which is becoming less and less every day? There has been practically no immigration during the past five years, and the number of native-born entering the mines has been so small as to be almost negligible. If every mine foreman in the United States today were to inform a central bureau of the number of new men trained in loading coal during the last five years, the total would be so small as to make the coal operators of this country put their thinking caps on just a little bit tighter than they have to in figuring their income taxes. What will be the result of the present tendency?

Banquet to Be Given Herbert Hoover

Herbert Hoover expects to arrive in America some time before the middle of September, the exact date to be determined by cable from him. The engineers of America, under the auspices of the American Institute of Mining and Metallurgical Engineers, have decided to express their admiration for Hoover's services during the past five years, in international affairs, by giving him a large dinner, to be held in New York, shortly after his arrival. He expects to go right on to his home in California, there to resume his engineering practice.

An organization has been completed—a general committee appointed by President Winchell of the A. I. M. E., also an executive committee as follows: W. L. Saunders, 11 Broadway, New York, is chairman of the committee; Charles R. Rand, 71 Broadway, New York, and E. P. Mathewson, 120 Broadway, New York, being vice chairmen.



BOOK REVIEWS

Review of Coal Trade in Past Year

SAWARD'S ANNUAL, 1919. By Frederick W. Saward, assisted by James P. Mahoney, Guy H. Burbank and the Editorial and Office Staff of *Saward's Journal*. Pp. 192, 6 x 8¾ in., no illustrations. Saward's Journal, publisher, 15 Park Row, New York City. Cloth Boards.

The *Saward's Journal* editors have carefully culled all the most interesting statistics and all the reports of enduring interest from their publication and reprinted them in book form. The excerpts and articles are laid together somewhat at random, but the lengthy table of contents at the beginning of the volume makes the inquirer reasonably at home. The annual largely looks at matters from a market point of view; but there is much information that coal producers will find useful.

Peace and Plenty in Industrial Affairs

INDUSTRIAL GOODWILL. By John R. Commons, University of Wisconsin. Pp. VI + 200 + 13 index; 5¼ x 8¼; 3 ill. McGraw-Hill Book Co., Inc., 239 West 39th St., New York City. Cloth Boards.

This book, dedicated to industrial goodwill, naturally treats on matters which have been discussed editorially and at length in the pages of *Coal Age*. The remarks which have been made in the editorial pages relative to the disadvantages of piece work are quite forcibly enumerated by Professor Commons. "Piece rates," he says, "*must be cut*, sooner or later, or else either industry will stagnate or wage earners will get all of the gain from improvements and none will go to the consumer and the employer; or else the employer will be driven out of business by competition."

Professor Commons has nothing to say about coal. It is not found in Wisconsin. However, the reviewer cannot help applying his words to that business and calling attention to the fact that in the coal industry piece rates are not cut; the union will not allow it. No one is driven out of business by the competition resulting from any improved facilities that may be provided to piece workers, except where nonunion fields still compete and are able to undersell by reason of lower piece rates which they alone can secure. But no one can deny that industry is stagnating as a result of the inflexibility of piece rates, just as Professor Commons has stated. There has been little adopted improvement for many years in the methods employed in the actual digging of coal. There are methods that would be approved if they were given an opportunity for demonstration, but there are no new adopted improvements, for the piece rates are not cut, and there is no incentive for the operator to introduce such improvements till piece rates are abolished, or supplemented by day rates.

Professor Commons goes on to speak of the task-and-bonus system, the method practically of a minimum wage with a piece rate based on the excess production above a certain definite task. This is not quite the plan that has been proposed editorially in this publication, for that which was advocated was a payment well below a reasonable and fair wage with a large bonus or piece rate on *all* the product whether great or small, the piece rate being quite substantial.

Difficulties are found by Professor Commons in the task-and-bonus system, but they hardly appear adequate. Those who have put up with the straight piecework system and can look to a union to prevent the making of agreements such as are likely to prevent unequal competition will surely find the task-and-bonus system or the part-day-wage-and-part-piecework arrangement satisfactorily workable, and productive of efficiency.

Professor Commons makes a statement which is surprising. On page 15 he says "Machinery and factory organization are continually approaching a limit of diminishing returns." It is hard to credit that statement as being applicable to the coal business. A big improvement in machinery and methods is still possible. At least five times as much as now performed should be done by the average man with proper equipment, methods and organization.

Later, Professor Commons say: "That limit turns attention to the human factor, and it needs only a candid attention to the experiments of scientific management to become convinced of the large resources and unusual possibilities within the human animal when once his motions and energies are studied and measured as the engineer studies and measures the other forces and materials used in production."

We much doubt if the possibilities of cheaper production are to be found in the muscle and agilities of man. There is some probability that an interest in work "when inducement is nicely adjusted to output through ingenious methods of compensation" may perhaps double production. If it does, the mine worker is entitled himself to all or nearly all that comes out of his greater self-adjustment and energetic abandonment to his task. It is his efficiency and skill, and the profit belongs rather to him than to his employer or the consumer. Machine development is different.

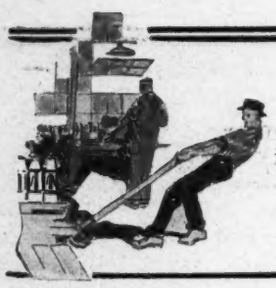
If the only change in production is due to personal development and initiative, then there is little justice in cutting piece rates. It is the impersonal advancement, the mechanical assistance, that should be rewarded with a lower rate scientifically calculated so as to leave some of the advantages in the hand of the workman. However, the plans for task-plus-bonus payment or dual payment by day and by product automatically provides a recompense to the operator or manufacturer without any scientific adjustment. He is not so much concerned whether the recompense is fair as whether it exists and will be received. Just now the operator knows he will not get it at all—hence his inertia.

After finding so much interesting—howbeit debatable—in the two first chapters headed Commodity and Machinery respectively it is necessary merely to indicate those that follow: Goodwill, The Public, Democracy, Solidarity, Theory and Practice, Security, Labor Market, Insurance, Health, The Shop, Education, Loyalty, Personality, Depression, The World.

Geographical Directory of West Virginia

MINE DIRECTORY OF SOUTHERN WEST VIRGINIA showing location and tonnage of mines on Chesapeake & Ohio, Norfolk & Western, Kanawha & Michigan, Coal and Coke, and Virginian railroads; 36 x 40 in. Scale, 1 inch = 4 miles Prepared by W. H. Cunningham, Huntington, W. Va. West Virginia Mining News, Charleston, W. Va., distributors. Paper. No cover.

This map shows the names of the companies on all the above roads, the roads that the mines are on, the names of the mines, their postoffices, their shipping points and their annual tonnages. The counties included are Cabell, Wayne, Lincoln, Putnam, Boone, Kanawha, Nicholas, Fayette, Raleigh, Greenbrier, Wyoming, Logan, Mingo, McDowell and Mercer in West Virginia and Pike in Kentucky.



NEW APPARATUS AND EQUIPMENT

The "Toledo Power Drive"

The "Toledo Power Drive," a new electrical device for operating hand pipe-threading and cutting tools, is now being manufactured by the Toledo Pipe Threading Machine Co., of Toledo, Ohio. The manufacturer states that this new device is another step forward in pipe-threading practice. That the drive is a labor saver is shown by the fact that while it would take an hour to cut a 12-in. thread by hand, the same tool operated

NEW ELECTRICAL DEVICE FOR OPERATING HAND PIPE-THREADING AND CUTTING TOOLS

by power drive will do it in not to exceed 7 min. There is no reason why it cannot just as successfully be used on tools of other makes of similar design.

The drive is portable and can easily be wheeled about to different jobs on its strong, but light wire wheels. The motors are of 1½ hp., of special design, and are furnished for the necessary type of current. Each outfit includes 25 ft. of flexible cable with a single plug connection for attachment at the switch box on the shaft housing of the "Drive." It is started and stopped by a specially designed push-botton switch. It has a two-speed transmission gearing, and the change from one speed to another is accomplished by merely pulling out or pushing in a knob. There are no universal joints, chains or other cumbersome mechanism, nor is there any change required in connection with the threading or cutting tool.

Controlling Apparatus for Elevators and Other Devices

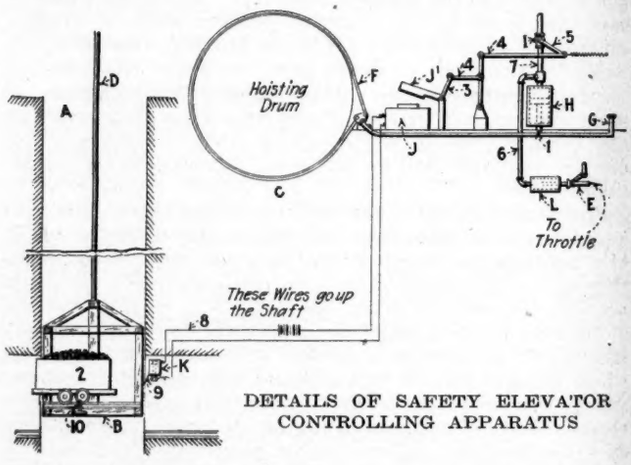
BY H. GOODNOW
Du Quoin, Ill.

Life-saving devices are always of interest to the thoughtful employer. When we consider the appalling waste of life in the past four years and link it with the live interest in mine safety appliances, the following description of McSherry's elevator controlling apparatus should call for the careful consideration of mine men in particular and everybody in general.

The inventor, James McSherry, of Du Quoin, Ill., is a practical coal man well known in the southern Illinois coal field. He has tried out his invention at the Majestic Mine at Du Quoin and perfected and demonstrated its workable value. His patent has recently been allowed, and a lively interest has already been shown by the miners and operators of Illinois.

Stated simply, the device is an attachment to the hoisting engine that places the power of instantaneously stopping the hoist directly in the hands of the cager at the shaft bottom, where conditions dangerous to life and property most frequently arise.

As shown in the accompanying diagram, the strong magnet *J* with the clapper *J*¹ in the engine room is connected to the valve *I* by the lever rods 3, 4 and 5. When the knife-switch *K* at the shaft bottom is closed, the magnet attracts the clapper, which in turn opens the valve and allows steam (or any other medium) to pass through the pipe 7. From here the medium acts simultaneously through the two cylinders *H* and *L*, the



DETAILS OF SAFETY ELEVATOR CONTROLLING APPARATUS

one applying the brake *F* by the action of the piston 1 on the lever *G*, the other closing the throttle by acting on its knuckle *E*. The hoist is now stopped and the cage held until a signal from the bottom causes the engineer to close the valve *I* and release the steam in the cylinders *H* and *L*.

As to the advantages derived from the use of this apparatus, the saving of property may be considered first. Any practical coal man knows that it is not uncommon, particularly where the hoisting is rapid, for a car to become misplaced on the cage after it has been rung away. Coal in the keepers, or any break or defect in them, might cause them to be open and thus allow the car to project over the cage. What would happen is almost too well known to be described—a wreck in the shaft which might well delay the whole mine for from one to eight hours.

Now consider the McSherry controller attached and the car started. The cager, always on the alert, as he

values his job, notices the car is out of place in a position a few feet lower than shown in the diagram. He simply slaps his hand against the insulator 9 and the switch is closed. By actual test, before the cage has risen to the dangerous position indicated, it has been stopped and the wreck averted.

Now comes the far more important feature—namely, the protection of life. Whenever men are hoisted on the cage they run two chances: First, that through some error of either the cager or the hoisting engineer the cage may be started before all are fully aboard. (If men never made such mistakes there would be no need for this or any other safety device.) Second, after all the men are on the cage and before they have passed out of sight of the cager, one or more of them could either be crowded over the edge, faint, or otherwise be placed in a dangerous position. In any case the cager could see this and stop the cage in time, where, if he had to signal the engineer, who in turn would have to act, the damage would have been done.

Although this article has stuck pretty close to the specific purpose described, the patent issued covers the broader field of any such elevator-controlling apparatus that might be used for a similar purpose in a different field. Such use, however, is not within the scope of this article, which is directed to coal-mining men.

To conclude, I believe that too much credit cannot be given to Mr. McSherry for his idea and its development, nor to the company whose representative, General Superintendent T. S. Cousins, backed up the inventor in every way and furnished him a place wherein to try it out and perfect his apparatus. Let all such work receive due encouragement so that the chances taken by the underground worker may be reduced to a minimum.

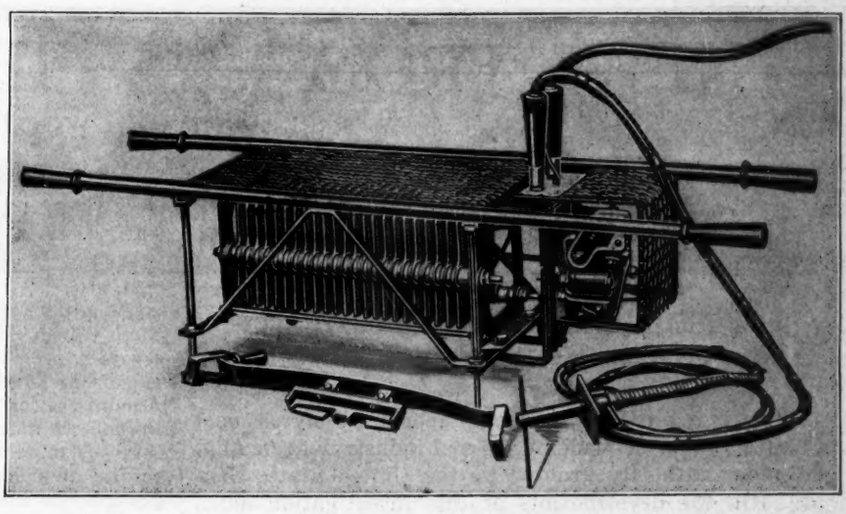
An Arc-Weld Bonding Machine

Electric-welded bonds are coming into favor in mines because when they are properly installed they are mechanically and electrically permanent. The Ohio Brass Co., of Mansfield, Ohio, has developed an arc-welding machine and arc-weld bonds that make it easy for an operator, after a reasonable amount of practice, to get a good job at every joint.

The machine is simple, embodying a cast-iron grid resistance with an automatic throw-out switch and a circuit breaker. If an overload comes on the machine, the circuit breaker shuts off the current automatically. The operator has remote control of the circuit and to interrupt it he merely pushes a small switch on the holder. This remote control makes for both convenience and safety.

The cast-grid construction of the resistance makes the machine rugged and, in case of accidental breakage, the grids can be renewed easily. The machine is never in the way, for it is small enough to fit into odd corners and let the trip pass by. Two men can handle it easily.

There are two types of bonds—the AW2 and AW3. Essentially they are alike, being copper strands mechanically and electrically connected at the factory to a steel terminal or sleeve. On the job the operator welds steel to steel with steel—the easiest of all welding.



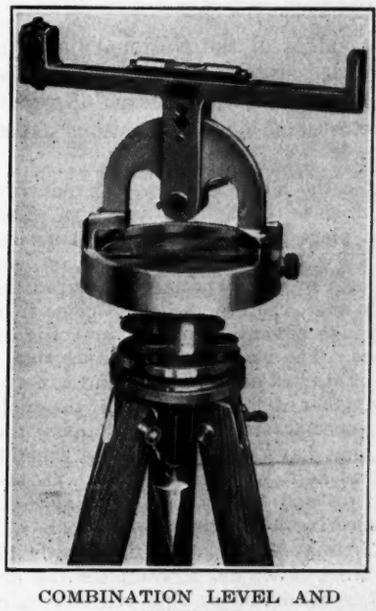
ELECTRIC ARC-WELDING MACHINE FOR BONDING RAILS

The bond conforms to another fundamental arc-welding principle in that the weld is built up in a 90-deg. angle. Experts have found that in order to get a good weld between the two parts being joined, the arc must be played into an angle of not less than 90 deg. Otherwise the arc will play against one side or the other of the groove and will not effect a permanent union down in the bottom of the weld—the important place in rail bonding.

The electric arc-welding machine here described is also useful for shop work as well as for rail bonding.

Baltimore Sighting Compass

The Davis Instrument Manufacturing Co., Inc., has recently placed upon the market what it calls its Baltimore sighting compass. As may be seen in the accompanying illustration, this is a combination level and compass particularly useful in mining and architectural work. The instrument is provided with a 4-in. graduated horizontal circle and a vertical arc, each reading to ½ deg. The compass needle is 4-in. size. The outer frame rotates around the needle graduations. Readings may be taken independently of magnetic variations of the needle, this arrangement being particularly useful where local variations are encountered. The sighting bar is equipped with adjustable cross hairs which allow clear vision. The tripod head shifts and is provided with leveling screws. The nstrument is strong and rigid, and together with its tripod weighs about nine pounds. It therefore may be carried about easily.



COMBINATION LEVEL AND COMPASS

NEWS FROM THE CAPITOL

BY PAUL WOOTON

Investigation of Coal Industry Now Under Way

What is regarded as the most important Congressional investigation ever made of the coal industry began Aug. 26 under authority granted by the United States Senate. On the developments of this investigation much will depend, it is believed. It is expected to furnish the data on which Congress may decide whether the Government will undertake some form of peace-time supervision over the coal-mining industry. In opening the hearing, which is before a sub-committee of the Committee on Interstate Commerce, Chairman Frelinghuysen made the following statement:

The important question before the committee is to ascertain the best methods to enlarge the production of coal for the coming year, in order to meet the demands, to prevent a coal famine, to prevent a shortage and, in that connection, to provide coal for the consumer at a reasonable price.

This inquiry is to be conducted in a broad spirit, with a desire by the Congress to make a study of the question without any prejudice; to ascertain the facts, with no desire to punish anybody or to have anything sensational, but, as citizens of this common country, to do what we can to alleviate the present situation—join together in a broad spirit of coöperation, in a united effort to solve the problem; and the committee wants the suggestions of everyone—all the coal men, and anyone connected with this industry, or having anything to do with it—to see if we cannot join together to bring about a solution.

The committee must, of course, look into the questions of transportation, car facilities, methods of distribution, the labor situation and the export situation; and as we go along I hope the committee will absorb enough knowledge of the coal situation so that they can decide what is best for Congress to do in the matter; but we want your help, gentlemen, and we want your suggestions.

Harry N. Taylor, president of the National Coal Association, made an extended statement to the committee. He was questioned at length by the Senators. Extracts from his statement, with some of the questions asked, are as follows:

One of the reasons for the slowing down of production even when the demand is on is the right of selection. That is, the public will often place an order for a certain sized nut coal, 2 x 3 nut, or a 3 x 4 nut, or a 4 x 6 nut, or some other sized coal, 3 x 6 egg, or some specially prepared size of coal. When they do that, the orders do not come in in exactly the best way to take advantage of the screening arrangements of the mines. The way these mines operate is as follows: All the coal is started on the screen and run over it. In this coal are any number of different sizes. If the public insists on one or two special sizes, it means that other large amounts of coal that have no ready market must be run over the screens and kept lying in the bins. In that way, equipment is tied up and transportation delayed, all because the public is selecting a certain class of coal.

We will have to produce at the rate of a little over 11,000,000 tons of coal a week if we are to complete the program of 500,000,000 tons estimated as this year's requirements. That is entirely possible. We feel it is possible to save the public from a coal shortage if we can provide for three things: First, we must not have an extraordinarily severe winter. This nobody can foretell, and it is entirely out of our power to guard against it. Second, the Railroad Administration must move coal in a regular manner. Third, the miners must redouble their efforts.

If the miners' convention that is to be held on Sept. 25 results in a disagreement, I do not know whether we are going to be able to mine any coal in this country or not. In fact, I very seriously doubt whether we will.

With that condition confronting us in the mining world, and I am simply telling this without passion and without any feeling, except that it is a fact, easily ascertainable, because there is no hiding a thing of that kind, the United Mine Workers, if you would call them in here, would give you the same testimony that I have as regards the published policy, and with that condition confronting us it is very serious. Of course, it might be changed in their meeting; I do not know whether it will or not. But, if that goes into effect there is little or no hope of overcoming a very serious shortage of coal this winter, and great suffering in this country.

Labor Is Not in Any Way Controlled

If we can keep the miners at work, and if the Railroad Administration can give us cars, I am sure the coal operators can produce the coal to take care of the public requirements; but those two elements are beyond our control and they enter so largely into this question that I do not believe any human being can predict what the outcome will be.

We are confronted in the coal business with this condition: The miners' organization is entirely exempt from the Sherman law, and can get together and make any demand on the operators they want after consulting with each other in different parts of the country; they can formulate a demand based on their own ideas, absolutely backed up by their organization, which is nationwide and international in scope, and they can have those conferences and make their demands without any infringement of the law. Therefore, the coal operator of this country is confronted by a combination of labor which is not in any way controlled, and without infringement of the law can get together and formulate a collective demand upon the operator which forces up his cost both in price and in the conditions under which the men are employed.

On the other hand we are confronted by a combination in the form of the Railroad Administration, a buying combination, which is to do all the buying that was formerly in the hands of the local purchasing agents scattered all over the country. This purchasing power is now in a centralized body, in the hands of one man; and as the railroads use practically 30 per cent. of all the bituminous coal mined in the country, the coal operator, scattered as he is, is confronted with a most harassing condition and combination of conditions. Labor can force up his cost price almost indefinitely, and the combination on the other hand of the Railroad Administration can force his selling price down almost indefinitely. Now, the coal operators have no right to get together and agree on a method of holding the price up in any way, and I believe that the figures that Mr. Morrow has given you show clearly that the combined efforts of the centralized buying power has had a very marked effect on the price at which coal has been moving from the mines. The natural consequence of that condition is such that it is not right. I am going to be very frank in saying that it is not right for such a large

percentage of our coal to be forced down to cost or below cost by a centralized buying power.

There is nothing that the coal men are so anxious to accomplish, if it is possible, as to take out from their business the seasonable feature; that is, if it were possible to have the industry active throughout the year, instead of inactive for six or seven months of the year and active for five or six months of the year. It would be a great thing, not only for the coal industry from an operating standpoint, but from the standpoint of the men engaged in the production of the coal and for the general public.

As the matter now is, there is always a time every summer when the railroads' sidetracks are full of empty coal cars, when others are lying idle and the men who make their living in those mines are out of employment because the mines have no orders for their product.

The railroads use, as I said before, practically 30 per cent. of the bituminous output. When there is no business in the mines they naturally have no business for their coal cars or that class of equipment that is peculiar to that business. If the railroads could arrange to take their coal supply at the time of the year when their equipment is idle, and when the mines are idle, they would accomplish three very important things.

In the first place, they would get their supply into storage, they would have the assurance of the already mined coal. They would use that idle equipment at a time when it is idle, and they could make it active, and would keep the men at the mines employed, and would relieve the labor unrest. As it is now, when the men are thrown into a period of idleness for three or four or five months every year, and only working, as they did, in pre-war times, 150 to 155 days out of a year—if that employment could be more regular, it would not be so necessary to make demands for higher rates per ton in an effort to get a whole year's living out of a few months' activity.

In other words, the more regular employment would largely offset the labor unrest. It would use the idle equipment that is doing nothing but lying on a sidetrack. It would bring the coal in at a time of the year when it is possible to dig it, and it would relieve the equipment for the use of the public in the fall and winter, when the public so badly needs coal. An equal distribution of the coal over twelve months instead of over six months would have a tendency to lower prices and make less labor unrest, better use of railroad equipment, and would stabilize the industry all along.

THE CHAIRMAN: Mr. Taylor, in that connection, prior to the war, when the railroads were under private operation, was any difficulty in procuring cars encountered? Were the railroads following the same practice as the Railroad Administration follows now in purchasing their coal only at the end of the year, or at a time when you are busy, or was the situation different?

MR. TAYLOR: Almost all railroad contracts that I have ever seen, covering a great period of years, contain what they call a minimum and maximum clause; and in the times of the year when they do not want to invest money in storage coal, and they are not running particularly heavy, they take the minimum; and in the time of the year when their business is good, and they want coal, they take the maximum. That spread is one of the causes of the troubles in the fall, because then the coal business is good and that is when they take the maximum. That always produces a car shortage, and a great deal of equipment that should go to public use is used in the taking of railroad coal. That prevailed before the war, and it has prevailed since.

THE CHAIRMAN: Can your association assist the committee in an effort to keep stable these prices by exerting influence with the members of your association to prevent their taking advantage of the present situation and raising the prices abnormally?

M. TAYLOR: Undoubtedly so, and it would be to the interest of the coal trade not to invite criticism from the public. All this association wants is a fair business margin on its coal, and we would much prefer to have a reasonable margin all through the year than to have no margin for a part of the year, and a great big peak load in the way of a margin for the rest of the year. Our efforts are being directed in that way. That was our reason for trying to relieve the situation, which we saw would make a runaway market in the fall, and we spent the money of the association in advising the public of that fear, so that there would be no misunderstanding about it; and the public, in a way, responded; and as far as they did respond, the increased tonnage immediately began to develop a car shortage, and from that time on it has been accentuated by this carman's strike within the last week or two weeks. The railroads were crippled and could not send their cars to the mines, and immediately there was a marked drop in production.

In order that time be allowed or the collection of further facts and figures, the committee recessed from Aug. 27 until Sept. 2.

Bureau of Mines Sampling Coal for Swiss Government

At the request of the Swiss Government the Bureau of Mines is sampling its purchases of coal in the United States. All expense of the work is being met by the purchaser. Other governments are expected to make a similar arrangement in the near future. This development has paved the way for the introduction of legislation looking to such a service for coal going to the individual buyer abroad. It is stated that coal represented to contain a maximum of 6 per cent. ash has been found to contain 30 per cent. ash when it was sampled abroad. The arguments in favor of government fuel inspection are as follows:

The representations of coal producers and consumers and the interests of foreign commerce have shown the need of some form of coal inspection that will at once assure to the consumer the grade of coal that he pays for, protect the interests of those preparing clean coal, and without discouraging the mining of poorer grades of coal, exert an influence toward good coal preparation, especially in time of coal shortage.

The proposed coal inspection system contemplates as a salient feature public advice as to the quality of coal as shipped. The force depended upon to produce results is a public statement of facts. For this purpose the machinery for accurate sampling of full carload lots is necessary. The Government now possesses facilities for analysis and publication.

It is proposed that each mining company set its own standard of quality consistent with the particular bed worked, the preparation and market which the business affords, and that the Government shall publish such standard and certify as to whether such standard is being maintained by the mining companies. Such work would not replace inspection by the mining companies. It would not certify as to the quality of each and every shipment, but it would inspect and sample at irregular intervals a sufficient number of cars of coal as shipped to indicate whether the declared standard of the mining company was being maintained.

Mines entering the system would be privileged to advertise that their product was from a mine whose standard of preparation was certified to by the Government. In case coal shipments were sub-standard the mine would be advised of the fact. If the condition continued, the facts would be given publicity and the mine, to retain a place as a certified mine, would be required to declare a new and different standard and one which its product could meet.

Mines entering this system would agree to allow shipments to be sampled en route at sampling stations and stand any added expense of transportation and handling incident thereto. All analyses would be published from time to time giving accurate information about American coals. Mines need not come into this system, but there would be manifest advantages in being on a Government approved list which would gradually increase the number using the service.

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Do As You Would Be Done By

IF AGAINST those who strike unfairly, strikes were declared, the striking habit would be cured. If only the man who refused to make shoes for the miner were told that he could not get coal to warm him or cook his food, or milk and meat to strengthen him, or the doctor to cure his ills, or bread to feed him. If, when he closed his shop in reasonless anger, all shops were closed to him in reasoned wrath, perhaps it would be different. He tells the world that it couldn't do without him. Can he do without the world?

He who works by the day should furnish such energy and judgment that a good day's work is delivered. Conversely, he who engages a man to produce coal by the ton should furnish the man so employed such energetic superintendence and adequate equipment that a fair opportunity to mine or load a large tonnage is afforded him.

Pit Wagon Has Growing Pains

WHEN stage coaches were first put upon rails they were hauled by horses from farm to market or dock. So long as horses were the motive power, the vehicles remained to all intents and purposes stage coaches. Weight continued to be an important factor till the locomotive came and replaced the horse, then the stage coach changed its guise and turned into a passenger car. The old hand brake disappeared; for a while another hand brake, but little better, took its place. Then came the vacuum brake, and then a brake operated by compressed air. Then came greater length and breadth, heavy draft rigging and springs, and solider and yet solider construction. In a like manner sizes of freight cars increased till at length a capacity of 100 tons was reached.

In Great Britain, however, it was thought well to use a few horses for "shunting," that is, for switching or shifting cars. For years the capacity of these horses held back the trend toward heavy equipment. Old Dobbin could not pull such big cars, therefore they were not desirable. And in the United States, in the earlier days, the grades under our tipples were often inadequate, and horses were used to place the cars and to drag them away. Perhaps for this reason the 35,000-lb. capacity car for a while looked like a pretty fair limit.

Again, in Great Britain, the women dumped mine cars, which were therefore apt to be small. Boys, and sometimes men, "put" them to the working face. The strength of the "putters" at the face and of the women at the tip had, with the weight of the loaded car, especially the latter, no little effect in keeping down car size. With cars of small capacity the gages and the wheel bases were perforce small. The rails were light and the curves were sharp, and soon the road beds restricted the size of the cars as much as did the strength of the female dumpers and the putter boys, not to mention the thinness of the coal, which also had an effect.

Nor was it much otherwise in the United States. On our tipples, we relied on the muscles of the men, and at one time the wagon grades were none too heavy at the dump. The managers did not choose to make them heavy, for while the loads went down the grade the empties went up it also. There were no crossover dumps, and perhaps there was a plane with both tracks at its foot on the same level. So what cars came loaded to the tip had to be pushed back to the foot of the plane on the same grade, which it was not well to make excessively adverse to the empty cars.

Inside there were often wood rails in the headings and nobody so much as dreamed of steel rails in the rooms. Every miner placed his own cars at the face. The mule brought them to the room mouth, and the two miners, or one of them, did the rest. Early gages and the wheel bases also had their effect, and, as a result, cars were light and of small capacity.

There are still mines where nearly a hundred mules supply the power for transportation. Some mines still exist where cars are delivered to the miner at the room mouth and are placed by him in the same position when loaded. Still may be found wood rails and crooked roads. But on the whole locomotives and ropes now perform all the inside transportation work that men and mules and sometimes ropes performed exclusively in the early 90's, while, outside at the dump, the car hoist now replaces human muscle. We can look therefore for all manner of changes in the build of the mine car.

The weight of the car will increase immensely. Roller bearings will be universal. Spring draft rigging will replace the old drawbar and looselink. The car will be made without an endgate and so be additionally strong. It will have a good brake, something that few, if any, cars have now. Is it too much to anticipate that it may have an air brake? The car will probably be of steel. Too many steel cars wander crippled into mine machine shops where the equipment is too inadequate to expeditiously repair them. But with proper tracks and greater rigidity and good brakes, why should not wrecks and consequent repairs be few? Surely, at least, when properly constructed they will not be wrecked by overloading.

One difficulty remains—falling roof. There is the possibility of roof falling in the room face or directly on the car or into the roadway of the mine, causing a derailment. All other possible causes of damage should be, at least, infrequent.

The late Samuel Dean, a keen American observer with extended British experience, declared that the United States supremacy in output per man came from the largeness of the cars. Perhaps in part he was right. We now have a chance to see whether his surmise was correct. The wythes that bound the car and kept it small and weak and puny have been cut, and we shall see it grow; and loading methods will doubtless grow with it.

If your mine is still using the equipment installed a quarter of a century ago—the boilers, the buildings, the engines, the fans, or the cars—it is not producing coal economically. Equipment, like debts, is subject to a statute of limitations.

As They See It From the Train

A BROKENDOWN, unpainted tipple; a score of ramshackle sheds dropped promiscuously around; piles of bony coal; a towering heap of rotting shale or slate afire; a building, half torn down, but still standing; a boiler house, shedding steam and smoke on all around; a burning ash dump pervading the air with sulphurous smells; the village with houses on stilts, with rickety stairways and small unfinished porches front and rear—this the generality of mining towns as seen from the train. No wonder the newspapers find ready readers of their defamatory articles; no wonder we hear it said that the mining life is so joy-destroying.

Look at the picture with which Simpkins, Slattery & Smith adorn their writing paper. It may not represent their place of business at all, but it shows that they believe there is an appeal in a good-looking establishment. A good village and a good tipple will not only produce much tonnage, but good coal; and, what is also good, it will sell it when mined. There are lots of better villages than that described—for the most part, they are back from the main line of railroad travel. A few more of these would brighten the industry. There are companies advertising their coal by pictures of their camps bedded in blossoms and overshadowed by trees, but there should be more of them.

Industry today is so complicated that working men and capitalists alike fail to see that progress for labor and for capital lies not in skillful maneuvers for advantage but in adding to production. He who does less, or inhibits others from doing as much as they might, is not doing his duty to his fellowman.

Still in the Dark Ages

TILL the beginning of the past century the houses of all but the wealthy were in comparative darkness. The light used was that of the candle; its function, strictly speaking was not the illumination of a room but the lighting of an operation. It gave light to a loom or to the diligent work of a sewing woman. The candle was usually carried from place to place where need for it might be found. The pictures of scenes of that day most happily contrast the warm yellow light of the candle with the cavernous darkness of the room around—a pleasing study in light and shade, such as might be duplicated in almost any mine today.

In 1792 William Murdock introduced gas lighting, and slowly the art of illuminating dwellings developed. The world began to move around without carrying a light. Passing from one chamber to another, the public found the illumination by night, as by day, sufficient for every occupation. Electric light later came to increase, yet further, lighting efficiency, and illumination became a science, with a learned society of its own to study its laws and their application.

But the mines are still in many cases, at least a century behind. The workingman in most cases sees everything by the light of the lamp on his head. The roads and the working places are only rarely illuminated. The driver and motorman frequently have to travel along unlighted roadways, which often swarm with human beings whose lights are burning poorly or are actually extinguished.

Probably most accidents from mine cars are due to defective illumination as much as any other one cause. The risks are made immensely greater by reason of the darkness. Falls over lumps of coal or rock, hidden by the Stygian murk, inability to find safety points for passing, impact with low roof or timbers, falls into ditches and over switch rods and pipes—all these are the outcome of darkness.

Where men are not hurt, it is largely by using a caution that interferes with efficiency. No one can do a good day's work in the dark. The dilated pupils accustomed to the darkness are dazzled by an excess of illumination and become unable to function at their best when confronted with the locomotive light. In any event a generally disseminated light, that will reveal the whole entry is what is really wanted. The light on the cap or on the locomotive hardly does this. Both are doubtless necessary, but the lighted heading or room exceeds them both in safety and efficiency.

Stationary electric lights have long been used at landings; they are being extended along headings; they have even found their way to working places. Before long we shall find them in all live workings where there is no gas. The mine workers may be last to receive light, but it will not always be denied them, for the denial does not pay. Both along the track of the mine and the roads of the village, illumination is needed for safety, efficiency and comfort. A good light is necessary also for proper eradication of impure coal; slate and bone at the face.

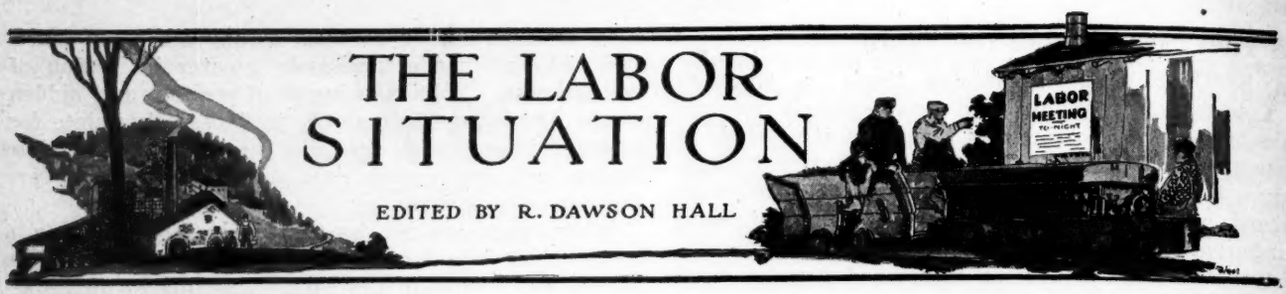
No nation can become poor by buying the idle hours of its people, even if the works constructed at such times are of little relative value. The only fear is that the work thus started may extend into the hours that would in any event be hours of activity.

A New Type of Landlordism

WORD from Portage, Penn., shows that if the mine workers can enforce it, a new landlordism is to spring up in Pennsylvania. Houses used to be so poorly constructed, and the rents of houses relatively so high, that the renting of them to mine workers was one of the valued perquisites of the operator. That was the case perhaps 30 years ago. As the years passed, houses were better built. No longer did the air whistle through them. They were plastered and wainscoted. They were provided with cellars, coal sheds, fences and sidewalks. They were piped for water, gas and electric light.

Rents were not raised, so that the rate of profit soon became as low as four or six per cent. on the investment after repairs were made. It was a time when profits on mining were low, and often there were no profits. The house rent alone showed a profit for, small as it was, it was never wholly extinguished. It seemed to some an evil sign that while coal was sold at or below cost, house rent was profitable. Yet it paid at best merely a bond rate of interest.

But now renting is to be wholly a debit. It is no longer to pay a profit large enough to compensate for obsolescence or depreciation. The yearly papering of every room, with the yearly repairs, with the cost of free gas, or free electric light and free water, will eat up all the rent if the Portage program of $1 per room per month gets wide acceptance in the biennial contract. The housing of the employees is to be not a profitable but a dearly paid, privilege.



THE LABOR SITUATION

EDITED BY R. DAWSON HALL

General Labor Review

During the past week the trend toward reason in labor matters has advanced by leaps and bounds. Perhaps there is some advantage in nationalization—few are the things without advantages—for when the nation has an industry in charge it learns that high wages really do make operation either costly or impossible, and the experience of the politicians is thus communicated to the people. The Government has learned in its management of railroads that the reason why the corporations do not grant higher and higher wages is not that they do not want to see prosperous workingmen, but that they cannot afford to increase wages without raising prices in proportion. Our nation is, as far as the railroads are concerned, a democracy running an industry, an industrial democracy, and it is beginning to cry for sanity.

Still Small Voice of the Average Man

The sounder minds among laboring men and capitalists are for the more reasonable courses. As William C. Redfield, Secretary of Commerce, says in the *Nation's Business*, "While on the surface of our life the demagog may rant and the anarchist may proclaim and the extremist, whether for capital or labor, may shriek with equal futility, the thing we are to find, if we can, is what saith 'the still small voice' of America concerning the basic facts of work and industry."

That voice is just now, at last, being heard, after two or three months of demagogy, anarchy and extremism. The old middle way, *media via*, is going to be tried. The majority of American workingmen still have a conscience which condemns the demanding of unfair wages by a strike-and-violence method. They believe in getting all the wage they can when seeking a job, in leaving a small-wage company for a large-wage one, in looking for the best place to work, but do not believe in forcing unusual and unreasonable wages on their brother workingmen by means of a strike and a threat of revolution.

Anthracite Program, No Evidence of Sanity

Still there are things to record this week which will seem to contradict this prophecy of sanity in labor affairs. The events, however, are largely a week old and those that are newer as in the Belleville, Ill., district cannot be said to be the work of profiteering labor. In fact, with such few working days, as the Belleville mine worker has, he cannot profiteer. He does well if he lives—if he insists on staying in Belleville. He is parading 125 miles to get what he wants. It would be better if he spent his money and energy not in striking and touring the country, but in migrating. For migration is the best cure. If Belleville has no orders, then let it go where the coal is in demand. If wages make prices too high for Belleville coal to get into the market, let Belleville clamor for a reduction in wages or leave the county of St. Clair for places where the coal is better. Let it not seek a big wage and so put the county out of the running altogether. This applies to many other places.

In the recent anthracite convention representing the 135,000 union men of the anthracite region, it was Secretary-Treasurer William Green who spoke for the union administration. John L. Lewis was present but he evaded the issues, saying that he was desirous of becoming better acquainted with the conditions in the anthracite region before making a decision.

William Green was cautious. He spoke about the necessity for steady work—a desideratum which both capital and labor agree on but which rests with the consumer and not with the producer. The consumer, whether workman or steel magnate, may in time be as generous in *giving* work as he is now keen in *seeking* it. Mr. Green emphasized the closed shop as the main demand of all those the union purposed to make. But while he was clear about the closed shop, about the shorter day he was somewhat more general. He declared that the day was now too long. It shortened the miner's life to work so many hours in a dank, dark atmosphere. This story may go a long way with those who know nothing about it, and, as the consumer is the person who is to be moved to sympathy, perhaps this kind of palaver has its good points. However, the mining man knows that the miner lives long and heartily. On Labor Day Will Green would be just as likely to say that mining bred stalwart men and that there were no finer body of hardy soldiers than the mines supplied—which would be true. But just now, of course, the limp, not-long-for-this-world mine worker is the one to be painted.

Surely Another 60 Per Cent Is "Substantial"

As for a wage increase, the secretary-treasurer merely said it must be "'substantial." Some one drained a glass of water during a lull in the convention—it was Andrew Matti, vice-president of District No. 9—and in a jocular mood he toasted the "6-hour day and 50-per-cent increase." The crowd was in no mood for 50 per cent. and shouts of 60 per cent. came from all quarters. The mine workers are sure of what they want even if the international headquarters is not, and no wonder the mine leaders who know the truth hesitate to lay so great a burden on their brothers toiling in other industries, some of which industries are far more distressing to health and even comfort than mining, and mostly less well paid.

Another speaker was Mrs. George Moyer, of Berwick, who is a sort of professional contemner of the state police which she opposes as an organization. She got the convention to vote unanimously that no member of the union or any body of mine workers would take part in any parade headed by the state police and no member of the union would participate in any festival in which the police took part. It would be easy, if this rule is followed, to arrange for the disbanding of a miners' parade, having a sinister purpose, simply by putting the police at its head.

Fourteen Points of the New Contract

On Aug. 22 the scale committee made its report which, as amended later on the same day, is given as follows practically verbatim. The amendments of the second day are recorded later. The words "We demand" appear in the original at the beginning of each clause in painful iteration. Nowadays, when we say so much about democracy and one man being as good as another, it might be well for all of us to outvie one another in courtesy. But the miners apparently do not believe in *noblesse oblige*. The demands are as follows:

(1) That the next contract be for a period not exceeding two years and that the making of individual agreements or contracts be prohibited.

(2) That the contract wage scales be increased 60 per cent. and that the increase secured in the supplemental agreements of 1917 and 1918 be included in the wage scale as the basis upon which the 60 per cent. shall be added and that all daymen be granted an increase of $2 per day.

(3) That a uniform wage scale be established so that occupations of like character at the several collieries shall command the same wage and that shovel crews operating for coal companies shall be paid not less than the rates paid by contractors to shovel men.

(4) That a work day of not more than 6 hours from bank to bank be established for all classes of inside and outside day labor and monthly men, according to the agreement for a five-day week, the uniform rates to be the basis upon which the advance demanded shall apply with time and a half for overtime and double time for Sundays and holidays.

(5) That a closed-shop contract be granted, meaning full recognition of the United Mine Workers of America as a party to the agreement.

(6) That all dead work be paid for on the consideration basis existing at the colliery and that where more than one miner is employed, they shall all receive the same rate.

(7) That payment be made for the erection of all sheet iron, props, timber, forepoling, and cribbing; and, that, where miners are prevented from working on account of lack of supplies, they be accorded the opportunity of making a shift at some other work at the consideration rate.

(8) That, in the settlement of grievances, the aggrieved parties shall have the right to demand settlement upon a basis of equity and if such equity settlement is requested the conditions of 1902 shall not enter into or prejudice the case.

(9) That a uniform rate of 17c. per inch be paid for all refuse in all kinds of mining up to 10 ft. wide.

(10) That, wherever practicable, coal shall be paid for on the legal basis and that dockage shall be eliminated.

(11) That, on all reel motors, one motorman and two brakemen be employed and that, on all other motors and engines, assistants or patchers be employed and that, when motormen or engineers are repairing their motors or engines their assistants shall be employed to help.

FOR BETTER OR WORSE

(12) That when any tools are lost through no fault of the employees as the result of squeezes, water or fire, they are to be compensated for such losses.

(13) That where contract miners are employed in company work, the company shall supply them with the necessary tools and, failing to do so, shall compensate them by paying each miner not less than one extra hour per day for the use of such tools and that the company shall supply to all company men the necessary tools free of charge.

(14) That where contract miners encounter abnormal conditions in their working places, they shall have the privilege of receiving consideration work.

(15) That the supplemental agreement which terminates with the declaration of peace shall be continued until the expiration of the contract and that our officers be instructed to immediately notify the representatives of the operators regarding this decision.

The committee's report not only included this fifteenth clause (that has reference not to the new contract to become of force Apr. 1, 1920, but to the old contract which at the conclusion of peace is to be extended), but also made the following provision to be followed in making the new contract: The scale committee to negotiate the contract shall be composed of the officers and the executive board members of the three districts together with the resident international officers and the three mine workers from each district affected. Each district president shall select the three mine workers in his district, subject to the approval of the executive board. Thomas Kennedy, president of district No. 7, served as chairman of the scale committee and James J. McAndrew was its secretary.

Each clause was carefully considered. Delegate Matti, vice president of District No. 7, Hazelton, who possibly feared that his toast to a 50-per-cent. increase might make him unpopular, asked that the scale provide for a 75-per-cent. increase instead of 60 per cent. President Kennedy declared that 60 per cent. "hit a good average of the many suggestions received from the locals." Matti again failed to convince the meeting that he had hit it right.

Section 4 as presented opened as follows: "We demand that a work day of not more than 6 hours be established." It was amended to read "not more than 6 hours, from bank to bank, be established." As a result, if the new reading is accepted by operators, it will mean that the working day will start from the time a man is supposed to present himself at the head of the shaft or mine mouth ready for work and end when he arrives at the shaft head or mine mouth at the day's end. The men claim correctly that the travel from the shaft mouth to the working place takes 15 to 20 min. and that it takes 5 or 10 min. to be raised to the surface. About this there can be little question. Whether they should be compensated for this work of traveling is a fairly debatable matter, for everyone has to travel some distance to work unless he is fortunate or unfortunate enough to be a resident janitor of an apartment. Under the agreement of 1916 no allowance was made for traveling, the rule being 8 hours from time of reaching the working place to the time of leaving it. It was Christ Golden, of Shamokin, president of District No. 9, who asked that "and monthly men" be inserted in this section, which replaces 6 hours for 8 hours. He also wanted to leave out "day" in "day labor." Several argued for the amendment saying that the companies were forming an organization of monthly men, who would take strikers' places in the event of trouble if they, the monthly men, were not in the United Mine Workers of America. The amendment was lost but later in the day a vote added to demand No. 4 the words "and monthly men."

In discussing section 5 some one wanted the "checkoff" added to the "closed shop" but this amendment failed of approval after much debate and some remarks by the acting international president, J. L. Lewis. William Green stated that the scale committee intended that the closed shop should include the checkoff. There was much bitter debate on the lack of uniformity of rates between mines and companies, and criticizing the fact that the establishment of uniformity had been so long delayed.

On the following and closing day a demand was added requiring that checkweighmen and docking bosses be allowed to serve on mine committees. Another amendment was one made to section 9 which now not only demands that "a uniform rate of 17c. per inch shall be paid for all refuse in all kinds of mining up to 10 ft. wide" but adds that "proportional rates" shall be paid "for all mining over 10 ft. wide." Some one wanted to make the rate 28c. per inch but that amendment was voted down.

Section 14 had also to stand for amendment, or rather for addition, for the different kinds of consideration work were written into the manifesto. There is a complaint that in many cases contract miners are compelled to remain at home for days and even weeks waiting for assignment to consideration work. Now under the new demand each man is to be allowed to decide for himself

whether he is entitled to receive consideration work. When complaint was made that extra pay was not given when work had to be done by the light of safety lamps it was replied that clause 8 covered the difficulty. In this clause it is said that equity and not the contract of 1902 shall cover any matter where the mine workers so elect.

With This No Other Clause Is Needed

Clause 8 is such a blanket affair that it would vitiate the force of any contract to which it might be appended. Why have a contract any longer than sufficient to appoint an umpire and compel obedience to his dictates, if a clause of this kind is to leave almost everything to his judgment.

All the collieries of the Hudson Coal Co. in the Plymouth district which, between them, employ 3000 men and boys, went on strike Aug. 21 to compel the company to adjust the scale for mining coal in the Top Ross bed in No. 4 colliery and in the Cooper bed at No. 5 colliery, in both of which unusual difficulties in the way of bone or rock are said to exist. There has been a grievance extending over many months but no satisfactory solution has been found. As the company refused to discuss the grievance so long as the men violated their contract by abstaining from work the union leaders persuaded them to return to work Sept. 2.

At the Breckenridge mine of the Allegheny Steel Co., in West Natrona, Harrison Township, Allegheny County, a general riot occurred on Tuesday, Aug. 26, which lasted more than 30 min. For more than five weeks trouble had been brewing at the mine, and a strike occurred on July 21 to which reference has already been made in this department. On Monday, Aug. 25, a mine guard was caught by strikers and beaten. On the following day warrants were issued for several union men, and about 4 p.m. of that day a mob gathered in which were not only men but women and children.

They marched to the mine and there set on the non-union workers. A member of the mob, it is said, threw a rock at one of the guards. It is even said that some of the strikers were armed and fired at a mine picket. This resulted in a general fight in which those armed used their arms and those without them used bricks. The guards, outnumbered 20 to 1, retreated but finding they could not get away, they fired and at the first volley a well-known agitator, Mrs. Fannie Sellins, was killed and the same fate befell an unknown miner.

Stories of Riot Do Not Tally Very Closely

Another volley in which the watchmen deliberately fired high was ordered and two other strikers fell. The mob then retreated but again gathered and advanced, but little damage resulted on this occasion. Five men were arrested on Aug. 27, Michael Szanfranchi, Mrs. Sellins' bodyguard, according to his own statement, Deofil Cherkopski, Steve Glowakski, John Shaw and Martin Rupnik. Philip Murray, the president of District No. 5, and John L. Lewis, acting president of the United Mine Workers, have both addressed President Wilson asking a federal investigation of what is termed "this most shocking crime which has aroused our entire membership." This is how the story reads with Murray as narrator:

One of the alleged victims, a miner, 58 years of age, was overtaken by a deputy while walking down the street, and beaten into a "helpless pulp," after which another deputy fired five bullets at the man. A few minutes later another deputy was ordered by the superintendent of the mine to "kill" Mrs. Fannie Sellins, an organizer sent into the district by the United Mine Workers, who, standing nearby, it was said, had appealed to the deputies to spare the aged miner's life. At the superintendent's order, it was said, Mrs. Sellins turned to flee and was then shot in the back and died.

Previous to the alleged killings the deputies, it was charged, had "opened fire on a number of men, women and children who were grouped around their homes."

For a while after the Springfield insurgent convention it appeared as if the Illinois strike would die out. There was much smoke everywhere but flame at Belleville only. The administration seemed to have won, but they reckoned without Belleville. The men who refused to abide by the convention vote and remained on strike were confronted by notices, when they returned, to the effect that they would be fined for every day they had been idle in violation of the contract, so they went on strike again against the penalty clause and to insist on the reinstatement of all the strike leaders without discrimination.

But before they thus struck a second time the state officials of the union and the operators had held a meeting in Chicago to discuss what should be done with the penalties already assessable against the striking miners. The operators seemed willing not to stand up for their contract rights but the state leaders saw in the second strike when it came to their ears a cunning scheme of the strikers to claim that what would be accomplished in Chicago—if anything was to be accomplished there—would be a result of their strike, thus strengthening the claims of the opposition to the state administration.

"Look," they would say, "we can get anything by a strike and nothing by submission to our contract requirements." However, the operators did actually agree to remit the fines.

Work or Be Expelled from the Union

This was the situation when on Tuesday, Aug. 26, an ultimatum was sent by Walter Nesbit, secretary-treasurer of the Illinois organization, to the secretary of each local in the state giving warning that all miners who were not back at work by Saturday would be expelled. The notification was as follows:

"You are hereby advised that the International organization, under date of Aug. 16, 1919, gave to the district organization the authority to revoke charters of striking locals in District No. 12. The District Executive Board in session held in Chicago on Aug. 25, 1919, decided to exercise the authority given and will revoke the charters of all striking locals that do not return to work on or before Saturday, Aug. 30, 1919."

When the notification was received at Belleville the strike leaders kept the strikers in line by telling them they were perfectly safe, for the National officials at Indianapolis would call a halt on the state officers as soon as the delegation of strikers could lay the case before Acting President Lewis.

When a telegram was received from a member of the delegation to the effect that there was "Nothing doing," it was interpreted by the leaders as meaning that the National organization would not permit the state organization to do anything. Inflamed by this interpretation, which was probably incorrect, more than 300 miners, after holding a mass meeting, marched out of Belleville, two by two, with the declared purpose of visiting every working mine in the district with the purpose of closing it down. They then proposed to continue their march southward.

Start to Rouse State Against Farrington

Headed by a large American flag and led by David B. Slinger, of Glen Carbon, and Luke Coffey, chairman of the policy committee, they are to march 125 miles and they will endeavor to call out men at Duquoin, Carbondale and other important fields. On Aug. 31 they pitched camp at Freeburg, seven miles southeast of Belleville. A large wagon, filled with provisions, followed the parade. Before starting the men were admonished that pilfering would not be tolerated.

The following official announcement of the position of the strikers has been issued by the Belleville strikers' organization:

"The state policy committee of the insurgents has issued from Springfield a call to all the miners of the state to strike immediately as their answer to the expulsion ultimatum."

The call is signed by D. B. Slinger of Glen Carbon, secretary of the policy committee, who said that he expected practically every mine in the state to be closed down by Monday.

What About the Rest of the United States?

A man is really big, not according to the damage he can do to others, or the amount he can compel them to pay him, but according to his ability to recognize and perform his duties to his fellowmen. No one believes that the mine worker can get the big wages he is asking—40, 50 and 60 per cent. increase—but if he did he would make everybody in the United States pay bigger prices than ever for coal —many times higher prices than the mine worker is willing to pay for his. The mine worker must remember the other people in the country have to make a living, and that to demand an increase above the increase in the cost of living is to try to get something that rightly belongs to someone else. Look around at the other people in the United States, and when seeking a wage adjustment, ask if it is one that is fair to the fifty other persons who, like you, are engaged in industry; for, as you know, there are at least fifty other industrial workers for every mine worker.

DISCUSSION *by* READERS

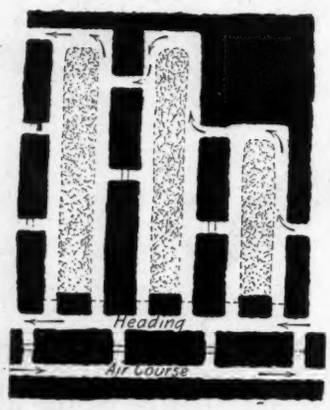
EDITED BY JAMES T. BEARD

Problem in Coal Extraction

Letter No. 1—Having read, with much interest the article regarding the extraction of coal, *Coal Age*, Aug. 7, p. 234, where it is said it was possible to recover only about 50 per cent. of the coal in the ground, I want to suggest a method that appeals to me as being far better than the one described in that article and which I believe to be safe, easy to ventilate and giving a promise of a larger percentage of recovery.

Adopting the general plan presented in the article, and driving the cross-entries and room headings in the manner there described, I would only change the plan of driving the rooms. For instance, instead of driving these rooms on 45-ft. centers, with a width of 30 ft., I would suggest using double rooms or chambers, as shown in the accompanying figure.

The headings being driven a sufficient distance to leave a 50-ft. barrier pillar between the first room and the cross-entry and give sufficient space for the purpose, I would turn roomnecks 12½ ft. wide on 37½-ft. centers, thus leaving 25-ft. pillars of solid coal between each opening. I would continue this plan throughout the length of the room headings.



DOUBLE-NECKED ROOMS

Roomnecks should be driven in 30 ft. before being widened out. At that point, the rooms should be connected in pairs, by cutting out alternate pillars between them, but leaving a 30-ft. stump to protect the heading. This would give double rooms, 50-ft. in width, as shown in the figure. As the face of each double room is advanced, a gobpack should be started at the entry stump and kept well up to the face.

A road is carried up each rib and a row of props set on the roadside next to the gob. I would build good crosswalls in the gob so as to give a solid support to the roof in the first working. If necessary, a few props should be stood along the working face, but these must be taken out as the gobpack is advanced.

Should it be likely that a squeeze may develop, 8-ft. cogs of timber, built at regular intervals in the pack along each roadside, will be of material assistance in avoiding the spread of the squeeze. It is my belief that if the packs are well built, the roof will settle on them and there will be little chance of a break occurring at the face. As each room reaches the limit, the miner starts to draw back the 25-ft. pillar and continues until he has taken out all the coal to within 30 ft. of the heading. The entry stumps are left for the final robbing, when the room headings are being drawn back.

This plan is easily ventilated, in the usual manner, by hanging a curtain on the entry, until the roomnecks have been driven and the two openings widened out to form a double room. Crosscuts must be driven in the pillars separating each pair of rooms and the air current carried through these crosscuts will provide good ventilation at the face of each room.

Forty Fort, Penn. ASSISTANT FOREMAN.

Work of Gathering Locomotives

Letter No. 1—A short time ago, there appeared in *Coal Age* [July 24, p. 164] an interesting inquiry asking for more practical information in regard to the work of gathering cars by the use of an electric mine locomotive. It was stated that previous discussions relating to gathering locomotives had not referred to the actual work of distributing the empties and pulling out the loaded cars. While I am unable to give a very extended description of this class of work, the following outline may be of interest:

The sketch on the next page shows a section of a mine over which I had supervision not long ago. The seam had been developed by sinking a slope on the full dip of the formation, the inclination being about 6 deg. The lifts were driven to the right and left of the slope at intervals of from 300 to 400 ft.

At the time of this writing, the slope had reached the basin and a gangway and its air-course were driven at that point, having a grade of 2 per cent. in favor of the loaded cars. As shown in the figure, the plan adopted was to drive the chambers in pairs, on the full pitch of the seam and leaving a block of solid coal between each consecutive pair of chambers. The chambers were driven 25 ft. wide with 22-ft. pillars between them, and the block of solid coal was 116 ft. in width, which provided for the driving, later, of another pair of chambers separated by 22-ft. pillars.

GENERAL ARRANGEMENT OF TRACKS AND ROOMS

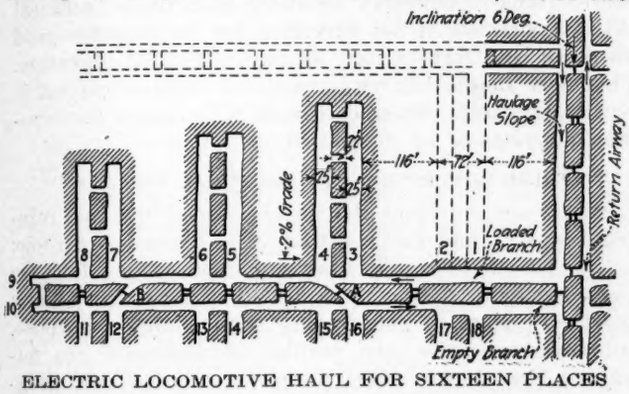
The plan affords loaded and empty tracks on the gangway and the air-course, respectively, and a passing branch at the mouth of the gangway. This passing track allowed the locomotive to operate on either end of a loaded or an empty trip. As indicated by the dotted lines in the figure, chambers 1 and 2 had holed through into the level above and were abandoned. This left but 16 working places on this lift, including the two places at the head of the gangway and air-course. Two men worked in each place, making 32 men in all, and the output of the mine ranged from 150 to 175 tons of coal a day, the miners each loading an average of from 70 to 80 cars having a capacity of 4400 lb. and weighing, when loaded, 6000 lb.

All roads were laid with 25-lb. iron, bonded and fishplated. A 7-ton General Electric locomotive was employed to gather the cars in the 16 places mentioned. The crew consisted of one motorman and two brakemen. The motorman was paid $4.52 and each brakeman received $2.24 a day.

Before going further, I would state that the reason for driving the chambers, as described, leaving every other pair of chambers to be driven later, was that this seam was overlaid with a shallow cover and worked under a river, making it necessary to use every precaution to prevent the mine from being flooded. As each of the chambers reached the limit, it was filled tight with rocks, before opening the adjoining pair of chambers in the block of coal left for that purpose.

ORDER OF DISTRIBUTING AND GATHERING THE CARS

The work of distributing the empties and gathering the loads was performed as follows: Starting from the empty branch on the air-course, the locomotive pulled eight empty cars through the crossover *A*, till the last car cleared the switch. Four of the cars were then uncoupled and pulled forward to Chamber 5, where two



ELECTRIC LOCOMOTIVE HAUL FOR SIXTEEN PLACES

of the cars were uncoupled, again pulled forward and pushed up the pitch to the head of Chamber 6. Returning to the gangway, the locomotive pushed the other two cars to the head of Chamber 5. Again returning to the gangway, the locomotive then proceeded to push two cars at a time to the head of Chambers 3 and 4, respectively.

The locomotive now returns through the crossover *A* and pulls eight more empty cars, from the branch on the air-course, through crossover *A* to the crossover *B*, on the gangway. Here four of the cars are uncoupled, pulled forward and pushed up the pitch to the head of Chambers 7 and 8, respectively, the locomotive placing in turn two cars in each of these chambers. A brakeman has in the meantime dropped the four empty cars through the crossover *B*, to the air-course, and the locomotive runs back over the switch, reverses, and passing into the crossover, pulls back two of the empties and places them at the head of the gangway. Returning through crossover *B*, the remaining two cars are placed at the head of the air-course.

The locomotive now proceeds to pull out two loads from Chambers 11 and 12 on the air-course. These are taken through crossover *B* to the gangway, where they gravitate, under the care of one of the brakemen, to the mouth of the gangway. The other brakeman returns with the locomotive to Chambers 13 and 14, where four more loads are obtained and taken by the locomotive to the gangway where they gravitate, under the care of the second brakeman, to the loaded branch.

In the meantime, the first brakeman has returned to the air-course through crossover *A* and meets the locomotive at Chambers 15 and 16 where four more loads are secured. In the same manner four more loads are taken from Chambers 17 and 18. This completes the work of distributing the empties to the chambers on the gangway and hauling the loads from those on the air-course. By a similar process, the locomotive proceeds to distribute 16 empty cars to the eight working places on the air-course and pull an equal number of loads from the head of the air-course and gangway and the six working places on the gangway.

The locomotive would always operate on the head end of the loaded and empty trips, in pulling these out and into the mine, the passing track on the loaded branch making this possible. A pressure of 250 volts on the trolley line was found sufficient for our purpose. No trolley wire was hung in the chambers, but a good reel and cable allowed the locomotive to reach the working face in each chamber.

While the work performed by this locomotive may seem insufficient to some readers, it must be remembered that there are countless and unavoidable delays to be considered, in every hauling proposition. Also, the extra brakeman was of great advantage in expediting the work in the plan described.

West Pittston, Penn. RICHARD BOWEN.

Mine-Haulage Proposition

Letter No. 6—Kindly permit me to refer to the letter of J. H. McMillan, *Coal Age*, July 10, p. 70, for the purpose of drawing attention to what seems to me an error in the estimate he makes on the saving accomplished by opening up the proposed road to shorten the haulage in the mine under discussion.

Allowing that the shorter haul of the new road would expedite the work to that extent that the output of the mine would be increased "65 tons per day," as Mr. McMillan claims, I fail to understand how he can assume that there will be no increase in the charges, particularly the cost of mining the extra 65 tons each day, and other items that would cut down the saving.

Mr. McMillan estimates the daily saving on the full market value of the coal, which he puts at $3 per ton, making the total saving $3 \times 65 = \$195$. While no one having any experience in mining costs will, for a moment, question the fact that the general hands employed in the handling of this extra tonnage will perform the work without extra cost to the company, and the expense for the general supervision of the mine will not be increased, yet, as I have stated, the cutting of this extra tonnage will require more machines and more men to operate them. More cars may be required to handle the output, and the cost for timbering, trackwork and explosives will be somewhat increased.

In my opinion, the saving effected will be nearer $2 than $3 a ton, making the estimated saving $2 \times 65 = \$130$ per day, instead of $195, as claimed by Mr. McMillan. ANDREW O. BAIN.

McKeesport, Penn.

Letter No. 7—I have been following the discussion of the proposed change in a mine haulage road, as described by J. H. Dickerson, *Coal Age*, June 5, p. 1058, and it has occurred to me that Mr. Dickerson's reason

for temporarily abandoning the proposed change was his fear that roof trouble, arising from the close proximity of the new road to the horseback shown in his sketch, would increase the cost of maintaining the new road; and he has very properly asked for the experienee and suggestions of others

In one of the collieries where I worked, there was a similar instance of a haulage road on a gangway that paralleled a fault for a considerable distance, probably 200 ft. in length. Owing to the fault, the roof on this stretch of road was of a slippy and broken nature and caused much trouble, until the company finally decided to arch the roadway at that place. When the gangway was being driven, timbers were broken, and the roof fell in several places. This continued for some time and it was only after that piece of roadway had been timbered three times that the management finally concluded to arch the section, which ended the trouble.

Arching a Haulage Road with Concrete

If I am right in assuming that this trouble is feared in the present case, let me advise that the same plan be adopted where the proposed road comes close to the fault. I would advise building at that point a concrete arch, for a distance of 100 ft. or more if necessary, depending on the condition of the roof. The sidewalls and arch should be suitably reinforced with old tee-iron rails, and a few holes should be left at the spring of the arch in which to insert crossbars or beams for supporting the trolley wire. In building such an arch, it is a good plan to fill in the space above the arch with ashes or other loose material that will distribute the pressure as evenly as possible and cushion the weight on the arch.

Looking at the proposition from an economic and safety-first point of view, there can be little doubt of the proposed road saving both labor and material and eliminating, to a large extent, accidents and delays caused by roof falls, derailment of cars and a long haul over a crooked road. In my opinion, the best thing to be done is to go ahead with the proposed change as quickly as possible.

Forty Fort, Penn. Robert Thomas.

Efficiency of Mine Workers

Letter No. 8—In the interesting discussion regarding the efficiency of coal-mine officials, opinions have been expressed as to the means best calculated to attain such efficiency. However helpful these ideas may be in regard to supervising and controlling operations, complying with and enforcing orders and regulations for the special purpose of getting results, it appears to me that we miss the real point of this discussion if we go no further.

Even the suggestion of a better coöperation of mine officials and mine workers, as a means of increasing the efficiency of the workers, though a good policy to pursue, presents a limited influence, unless the incentive to such coöperation is based on a real desire for another's good and welfare.

Efficiency is a word that is often misused and its true meaning misunderstood. Efficiency is defined as "The power of producing an intended effect." In its truest sense, it involves a righteous ambition that seeks another's good. Who has not observed that the trend of the present time is to subject all industrial and social matters to the moral code for examination and adjustment. It is the common sentiment of our greatest statesmen and prominent writers of today, and has been made the foundation stone of the treaty of peace between nations. *Coal Age* is no exception in urging the moral code as the basis of all intelligent discussion.

In view of this turn of events, it is stupid to estimate mining efficiency in dollars and cents. By such a course, capital seeks profits out of labor and labor seeks to profit from capital, each having its individual interests in mind; but the highest efficiency is only to be attained by the use of capital and labor for the common good. Our efforts must be exerted to remove every known obstruction and clear the way for intelligent thought and action, which alone can produce real efficiency.

The desired coöperation of employers and employed can only result from a better understanding of each other's conditions and limitations. It is said that "knowledge is power," and a more enlightened understanding of both capital and labor will remove the antagonism that, in the past, has formed one of the chief obstructions to efficiency in every industry. Technical skill is worthless if not exercised for the common good of those who form a part of any industrial operation. This is a simple but vital truth. Likewise, capital is powerless except when employed to advance the common interests of all concerned.

False Conception of Industrial Progress

When one considers the importance of the coal mining industry and realizes that it is a most hazardous calling, it seems a pity that so comparatively few are possessed with a sincere desire to advance the other's good. In place of coöperating with a single purpose, controversies arise and sordid self-interests are advanced that show a false conception of industrial progress.

It is discouraging when appealing to mine workers, who take a more studied interest in mining affairs, to be met with such excuses as, "It is not worth while to spend time and thought on self-improvement when there is already too much unhealthy competition for advancement in positions, and the chances of making good along that line are slim." Instead, many resort to devious ways of gaining promotion. All such advancement is accomplished at the expense of efficiency. Self-centered ambition and the indifference of so large a proportion of mine workers accounts for most of the observed lack of efficiency in mining operations.

Students of mining frequently remark on the wide difference between practice, and theory and many are led to question the advantage of acquiring a mining education. Others are led to inquire whether efficiency is an imaginary state or a real condition, and how it is to be accomplished. My answer is, conditions in mining are just as one makes them and results are measured by one's ambition and action.

While it is true that a more efficient employment of capital would reduce the cost of production and make mining more efficient, this does not meet the need of increasing the mine worker's efficiency, which must depend on and grow out of his own enlightenment and activities. Such enlightenment would make the worker more reliable, less wasteful of material and less subject to accident, and would avert the strikes and controversies that are now so frequent.

Ladysmith, B. C., Canada. William Wesnedge.

INQUIRIES OF GENERAL INTEREST

ANSWERED BY JAMES T. BEARD

Lubricants for Roller Bearings

Kindly publish, in an early issue of *Coal Age*, your opinion as to what is the best lubricant for roller-bearing, mine-car wheels. After trying numerous lubricants on the market, we have been unable to reach a decision as to what kind of lubricant will give the best results, in the use of this equipment.

Tracy City, Tenn. S. R. HAMPTON, Supt., Tennessee Cons. Coal Co.

The object of a lubricant is to reduce the friction between moving parts by preventing the direct contact of their surfaces through the intervention of a thin film of the lubricant. The lubricant must possess the necessary viscosity to withstand the pressure and the heat generated by the movement of the parts on each other.

The proper lubricant to employ, in any case, will depend on the kind of bearing, the load carried or pressure at the point of contact, and the speed of motion. The movement of roller bearings is such as to feed the lubricant between the bearing surfaces, which is a condition favorable to the use of a semi-solid lubricant having the consistency of a paste.

There are a large number of lubricants now on the market, designed for lubricating mine-cars equipped with roller bearings. Several of the manufacturers of this class of equipment have made a special study of the matter of lubrication and, in some instances, exhaustive tests have been made to determine the character of lubricant best adapted to a particular type of bearing.

An interesting pamphlet entitled "Mine-Car Lubrication," by E. N. Zern, has just been published by the Swan & Finch Co., New York. In the matter of recommending the best lubricant to use in a particular case, *Coal Age* can only advise a careful reference to its advertising pages and correspondence with reliable manufacturers of both lubricants and roller-bearing, mine-car wheels of which there are a large number. The proper lubricant to employ will be found to depend wholly on conditions and type of bearing in use.

Repainting Houses

I want to ask if *Coal Age* can give me some information on what is necessary in the repainting of our company houses. So often, when this work is done, the results are far from satisfactory and I would much appreciate suggestions along this line. MANAGER.

————, Ill.

One of the chief causes of dissatisfaction in repainting is the later peeling of the coat applied. This may be due to any one or more of a number of causes. A good quality of lead-and-zinc paint must be selected and this must be applied in dry weather and when it is neither too cold nor too warm. Cold causes the paint to shrivel in drying and hot weather is apt to blister the coat.

Before applying a new coat of paint, the old coat should be examined to see that it adheres closely to the wood. All linseed oil paints shrink in drying and if the old paint is badly cracked or peeled the shrinking of the fresh coat will pull it off. When the old coat is not well preserved nor holds fast to the wood it must be removed before applying another coat. This is sometimes done by scraping or by the use of a steel-wire brush, or by a paint burner specially designed for that purpose. To examine an old coat of paint, slip a penknife blade under the paint, in several places, to ascertain whether it is fast to the wood or will flake off.

Spontaneous Combustion in Mines

Please state in the columns of *Coal Age* whether a fire found burning in some old abandoned rooms in a mine where I worked some time ago could have been caused, as it was claimed by the mine boss, by spontaneous combustion. I had not thought that this was possible as there did not seem to be anything there to start the fire. What is the cause of spontaneous combustion and how can it be prevented? STUDENT.

————, Ind.

Yes, spontaneous combustion is always possible where carbonaceous material or other combustible matter exists under conditions that generate heat, provided sufficient available oxygen is present to start and support the combustion.

The cause of spontaneous combustion is the slow oxidation of carbon or other inflammable substance. As this oxidation proceeds, it is accompanied by the generation of heat. If the condition is such that the heat is generated faster than it is radiated, a rise in temperature takes place and this may continue until the point is reached where the carbon monoxide gas produced within the mass becomes ignited, producing flame and rapid combustion of the material follows. The presence of sulphur (pyrites) in the waste, in mine workings that are damp and moist, is favorable to spontaneous combustion taking place where fine coal and dust are present.

In order to prevent, as far as possible, spontaneous combustion taking place in coal mines, every precaution should be taken to avoid coal and slack finding its way into the gob. This is more important where the workings are moist, the ventilation poor and there is more or less sulphur present in the waste. Also, it is important to prevent the accumulation of oily waste in pumprooms and other places in the mine.

EXAMINATION QUESTIONS

ANSWERED BY
JAMES T. BEARD

Mine Examiners' Examination Springfield, Ill., June 17, 18, 1919

(Selected Questions)

Ques.—Assuming you were about to examine a mine for explosive gas, what would you consider your first duty as a mine examiner before you entered on your rounds of the mine?

Ans.—The mine examiner having trimmed and lighted his lamp proceeds to examine the ventilating apparatus to ascertain that it is working properly. This done and before entering the mine, he must place a suitable danger signal, at the shafthead or mine entrance, as a warning for no one to enter the mine until the signal is removed at the completion of the examination by the examiner, who then enters the mine and proceeds with his work.

Ques.—If, in making your examination of a mine, you find gas on the falls, what would be your method of procedure, and what would you recommend for safety, the mine being operated by naked lights?

Ans.—The finding of any considerable quantity of gas on the falls, by the mine examiner, indicates that a dangerous condition exists in that section of the mine, and he should at once proceed to safeguard the situation, by preventing anyone from entering any portion of that section until the gas can be removed. It may be possible for the examiner to erect a temporary brattice so as to deflect the air current over the falls and remove the gas when he has finished with the further examination of the mine. In that case, the work should be done before the men enter the mine.

In any case, after the gas has been removed, it will be necessary to examine all that portion of the section that is on the return of the air passing over the falls where the gas was accumulated. This is required in order to insure that these places are free from gas and safe for work.

When it is impracticable to remove the gas before fully completing the examination of the remaining portion of the mine, the affected section should be closed and safeguarded and no one permitted to enter it for work. Whether or not it will be necessary to keep the men from entering other portions of the mine will depend on the quantity of gas found on the falls and the conditions affecting its removal. This matter, however, can only be settled by the fireboss.

Ques.—If an open light was placed in a lodge body of marsh gas (CH_4) unmixed with air, what would be the result? Give your reasons.

Ans.—A safety lamp introduced into a body of gas unmixed with air would be promptly extinguished, the reason being that methane or marsh gas contains no available oxygen that would support the burning of the lamp. The gas is only inflammable when in contact with air. There would be some difficulty experienced, however, in introducing a safety lamp into a body of pure gas, owing to the flaming of the lamp, which would take place in passing through the surrounding zone of mixed air and gas. Because diffusion of the gas is constantly taking place, a body of pure gas, issuing from a feeder in a mine, must always be surrounded by an explosive zone of mixed air and gas, which would cause a safety lamp to flame and might produce slight explosions within the lamp before it reached the pure gas and was extinguished.

Ques.—The total rubbing surface of a square airway being 160,000 sq.ft., the length of the airway, 50,000 ft., the quantity of air passing 80,000 cu.ft. per min., what is the velocity of the air current, in feet per minute?

Ans.—This question is probably intended to give the length of the air as 5000 ft., instead of "50,000 ft." Dividing the total rubbing surface of the airway by this length gives, for the sectional area, $160{,}000 \div 5000 = 32$ sq.ft. Again, dividing the quantity of air in circulation by this sectional area gives, for the velocity of the air current, $80{,}000 \div 32 = 2500$ ft. per min.

[There is evidently a typographical error in the printing of this question. As it reads, the sectional area would then be 3.2 sq.ft. and the velocity of the air current, 25,000 ft. per min., which is absurd.—Editor.]

Ques.—If the water gage shows ½ in. depression, what is the velocity of the air per minute when a cubic foot of air weighs 0.076 lb.?

Ans.—This is a theoretical question that must be worked by means of the formula giving the theoretical velocity (v) of an air current, for any given head-of-air column (h), which is, $v = \sqrt{2gh}$. The pressure corresponding to a water gage of 1.5 in. is $5.2 \times 1.5 = 7.8$ lb. per sq.ft. The head-of-air column, expressed in feet, is now found by dividing the pressure in pounds per square foot, by the weight of one cubic foot of air, in pounds; thus,

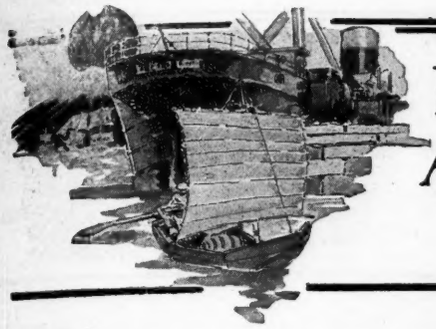
$$h = 7.8 \div 0.076 = 102.63 \text{ ft.}$$

Finally, the theoretical velocity of air due to this head-of-air column is

$$v = \sqrt{2gh} = \sqrt{2 \times 32.16 \times 102.63} = 81.24 \text{ ft. per sec.}$$

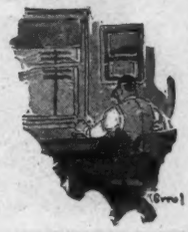
Ques.—Why does an explosion of firedamp, in a mine, render the air therein dangerous to life and health?

Ans.—The gases resulting from explosion of firedamp are chiefly carbon dioxide (CO_2) and the nitrogen remaining after the oxygen of the air has been consumed by the burning of the methane. These gases, the products of the explosion, are irrespirable and will not support life. It frequently happens that the explosion takes place in a limited supply of air or, in other words, the methane is in excess, there is then always more or less carbon monoxide (CO) produced, which is an extremely poisonous gas and fatal to life. These irrespirable and poisonous gases constitute the afterdamp of an explosion and render mine air dangerous.



FOREIGN MARKETS AND EXPORT NEWS

EDITED BY ALEX MOSS



Interesting Figures on American and British Coal Production

The serious complaints of coal shortage in Great Britain lend interest to figures recently compiled by the National City Bank of New York regarding the world's coal production in the last half century and the relative share of Great Britain and the United States therein. The figures show that the coal output of Great Britain grew from 124,000,000 short tons in 1870 to approximately 225,000,000 in 1918, while the output of the mines of the United States grew from 33,000,000 tons in 1870 to 685,000,000 tons in 1918. The British output in 1918 was double that of 1870. The United States output in 1918 was 23 times as much as in 1870. In all parts of the world aside from Great Britain and the United States, the output grew from 80,000,000 in 1870 to 500,000,000 tons in 1918, or about six times as much in 1918 as in 1870.

The United States, according to the Bank's figures, produced about 14 per cent. of the world's output of coal in 1870, 20 per cent. in 1880, 28 per cent. in 1890, 32 per cent. in 1900, 39 per cent. in 1910, 48 per cent. in 1918. Curiously, however, the United States, although turning out 2½ times as much coal as Great Britain, has not been, until very recently, an exporter of coal, in any considerable sense. Our exportation of coal had never reached as many as 20,000,000 tons prior to 1913, and even in the highest war record of exports only reached 26,000,000 tons in the fiscal year 1918, the highest record ever attained. On the other hand, Great Britain's exportation of coal was in 1913 72,000,000 tons, or nearly four times as much as that of the United States in that year, in 1910 62,000,000 tons against 13,000,000 tons exported by the United States. British ships, scouring the world for food and manufacturing materials and carrying only manufactures on their outward voyage needed ballast, and thus Great Britain became the world's great coal purveyor, especially in view of the fact that the United States, a much greater producer of coal, had few ships of her own to send over the ocean, and the value of her exports and manufactures was about a quarter of that of Great Britain.

Production Growth in United States

Growth in production in very recent years has been much more rapid in the United States than in Great Britain or Germany, or in fact any other country. Our own production of coal, according to the Bank's statement, grew from 270,000,000 tons in 1900 to 685,000,000 in 1918, while that of Great Britain was 252,000,000 tons in 1900 and 255,000,000 tons in 1918, that of Germany 165,000,000 tons in 1900 and 260,000,000 tons in 1915, the latest year for which figures are available. In the remainder of the world the output in 1900 was only 160,000,000 tons and in 1918, 230,000,000 tons.

The possibility of the United States becoming a large exporter of coal and perhaps the world's chief coal purveyor looks comparatively easy, when we compare the relative supply of coal in the various sections of the globe. The world's total available stock of coal, according to the Bank's statement, is 7,397,553,000,000 metric tons of which the United States has 38,386,507,000,000, or 52 per cent. of the world's total. Canada ranks next to the United States with 1,234,260,000,000 tons; China, 995,587,000,000; Germany, as it existed in 1913, 423,356,000,000, and Great Britain, 189,533,000,000; these figures are those of the Geological Congress held at Toronto in 1913.

As to the sections of the United States in which our 3,838,657,000,000 tons exist, the Geological Survey figures accredit North Dakota with 697,921,200 short tons. Wyoming, 670,545,100,000; Montana, 381,053,800,000; Colorado, 317,589,600,000; Illinois, 199,951,500,000; New Mexico, 199,777,900,000; West Virginia, 150,363,600,000; Pennsylvania, 124,627,000,000; Kentucky, 123,015,000,000; Ohio, 92,943,900,000. The coal supply of the world by grand divisions, as estimated by the Geological Congress above referred to is, for North America, 5,073,431,000,000 metric tons; Asia, 1,279,586,000,000; Europe, 784,190,000,000; Oceania, 170,410,000,000; Africa, 57,839,000,000; South America, 32,097,000,000 metric tons.

Coal Market at Rosario, Argentina

The quantitiy of coal imported into Argentina in 1912 was 3,707,956 metric tons, of which 3,499,989 tons came from the United Kingdom and only 115,901 tons from the United States. Of the total quantity thus imported, about 10 per cent. was delivered directly at Rosario and small quantities were delivered at Corrientes, Formosa, Santa Fe and Posadas. The custom house valuation was $6.75 per metric ton, United States currency, and no duty was assessed. In 1914 some 3,421,216 metric tons were imported, of which 3,242,519 tons came from the United Kingdom and about 339,807 tons were delivered direct to Rosario by vessel. In 1915 the importation of coal declined to 2,543,887 tons, in 1916 to 1,884,781 tons, and in 1917 to 707,712 tons, and the shortage thus caused has been supplied in the Rosario district by wood, fuel oil, bran and corn.

It may be seen that Rosario and its immediate environs represent about 10 per cent. of the primary coal market of Argentina, the principal consumers being the electric-power plant, the sugar refinery and the railroads.

The depth of the river alongside the docks at Rosario is 24 ft., and cargo boats drawing from 20 to 24 ft. are accommodated in the channel from Buenos Aires to Rosario. Boats drawing more than 20 ft. should make inquiry at Buenos Aires before proceeding up the river.

The three large consumers already mentioned are in a position to take coal in cargo lots, and are familiar with the standard grades of American coal. There are but two dealers in Rosario who import coal and both are British firms, Wilson Sons & Co. (also representing Cory Bros.), and Mann George, Depots, Ltd. The price of coal at Rosario is, of course, dependent chiefly upon ocean freight rates, since the freight represents at present about three-fourths of the cost price of the coal delivered.

In this connection it should be noted that in 1914 the ocean freight rates on coal from South Wales to the River Plate were on the basis of 14 shillings per ton; they rose in 1917 to 120 shillings per ton, and declined by March, 1919, to 50 shillings per ton. The British railways within the Rosario district have converted many of their engines into oil burners, and the use of wood has become quite general for steaming purposes. Some of the flour mills found no market for their bran, due to the loss of their export market, and are burning the bran and thus saving more than its cost to them. The fact that oil fuel has increased in price in proportion to coal prevents any serious and permanent inroads upon the coal demand in that direction. From the present outlook it may be said that the Americans will supply the coal market of Argentina if they can compete in ocean freights to the River Plate.

The stevedore charges for unloading coal at Rosario are about 40c. per ton, and the charges for port dues, weighing, revision, etc., are equivalent to approximately 66c. per ton. There is little demand for bunker coal at Rosario inasmuch as vessels can take on coal to better advantage in Buenos Aires, that market being usually 2 shillings per ton cheaper than Rosario.

Venezuela May Soon Be Large Producer of Coal

Although large deposits of coal have been known to exist in Venezuela for some time, the inability to secure materials and supplies, and the lack of transportation facilities during the war has greatly hindered operations. Now that normal conditions have been resumed, it is confidently predicted that coal exploitation will make great strides. The Mercantile Bank of the Americas has received some interesting information on this subject from the affiliated bank in Caracas, the Banco Mercantil de Caracas.

"The coal deposits of Venezuela," says the bank, "are widely scattered and outcroppings have been discovered in five different sections of the country. The most important and the most valuable are located on the Goajira peninsula some sixty miles northwest of the City of Maracaibo. Coal mines here are being developed by an American corporation and as soon as the 100-mile railroad now under construction is completed, a hard bright bituminous coal of excellent steaming properties will be available. It is expected that this coal, of which there are estimated to be deposits amounting to millions of tons, will prove of great utility for the requirements of maritime traffic passing through the Panama Canal, as well as for domestic and manufacturing needs throughout the region of the Caribbean littoral.

"Two other deposits are located in the state of Falcon near the City of Coro, the port of export being La Vela. This coal is suitable for industrial purposes, especially glass and cement manufacture.

"The fourth deposit is located near the City of Barcelona, the mines being known as 'Guanta,' from the adjacent port at which this coal is shipped. Guanta coal is used to a considerable extent by the coastwise steamers. The fifth mine is located on the Unare River, about 120 miles east of La Guayra, and is situated less than five miles from tide water."

Revised Figures of Coal Exports for June, 1919

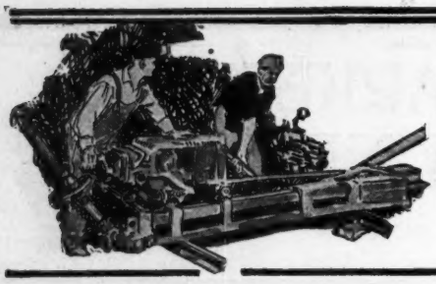
Exports of coal and coke, as reported by the Department of Commerce for June, 1919, and the figures for June, 1918, as finally revised, are as follows:

(In tons)

	June, 1918	June, 1919
Coal:		
Anthracite	378,753	474,315
Bituminous	2,205,711	2,179,201
Exported to:		
Canada	1,803,407	1,430,741
Italy	None	126,881
Panama	50,871	None
Mexico	13,508	14,312
Cuba	110,959	84,198
Other West Indies	25,944	30,136
Argentina	43,035	54,796
Brazil	93,782	100,778
Chile	None	8,397
Uruguay	48,105	22,758
Other countries	16,100	306,204
Coke	141,194	56,533

Imports of Coal Into Brazil

Vice Consul Augustus I. Hasskarl reports from Rio de Janeiro that total imports of coal into Brazil during May amounted to 92,963 metric tons, 24,657 tons of which were furnished by the United Kingdom and 68,306 tons by the United States. During the corresponding month of 1918 Great Britain supplied 11,639 tons and the United States 23,800 tons of the 35,439 tons imported. Arrivals in May, 1917, totaled 34,624 tons, of which the United States shipped 23,833 tons and the United Kingdom 10,791 tons.



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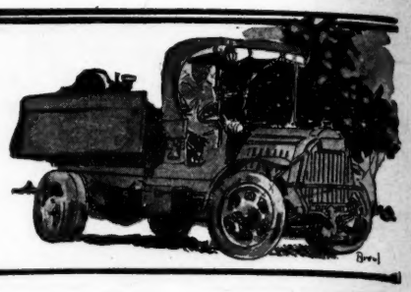


Charleston, W. Va.

Production in C. & O. territory still far below normal. Miners slow to report for work, mines short of power and transportation poor. Sixty per cent. production in Kanawha field. Mines greatly handicapped in New River field. New River Operators' Association holds meeting.

Coal production in the Charleston section and the adjacent territory was still being curtailed during the week ended Aug. 23, and although in excess of the previous week, when the railroad shopmen's strike forced a virtual cessation of all mining activities, was still far below normal. At the outset of the week cars were plentiful, some mines being furnished with a 100 per cent supply, but during the balance of the week there was a paucity of cars and in some fields no cars at all were furnished the mines. It is safe to estimate that the time during which the mines were operated did not amount to more than three full days, production, therefore, being not much over 50 per cent. of capacity. Such conditions were undoubtedly due to the fact that the Chesapeake & Ohio Ry. has not been able to get its own equipment in shape for normal coal handling, and also to the fact that empties from connecting lines had not had time to reach certain parts of C. & O. territory. Following an enforced holiday of about two weeks, miners were tardy about reporting for duty again, even though their earning capacity had been stopped for a portion of a month; and even where miners were working they were indifferent as to the length of time they remained in the mines. During the first part of the week, power trouble developed and some mines were without power at short intervals. In several instances miners became impatient and left the mines after a few hours' work, despite the fact that most mines were being operated with a large percentage of miners absent. On account of power trouble, car shortage and a shortage of labor, production could not be speeded up to any extent in order to offset the heavy losses caused by the strike. It is the spirit of absenteeism which the new wage contract has made provision to correct and it is this provision the miners are objecting to so strenuously.

Kanawha conditions were far from favorable during the week ended Aug. 23 from a production standpoint, due entirely to market conditions. In the first place, the car supply was absolutely inadequate throughout the week on the Chesapeake & Ohio Ry.; the first day's supply was encouraging, but from that time until the end of the week, the number of empties furnished was rather meagre, on Aug. 20 reaching the vanishing point so far as some mines were concerned. Even with cars available full advantage could not be taken of an opportunity to load them, mainly because of absentees among the miners. There was not more than a 60 per cent. production in the Kanawha district, or on a rough estimate 100,000 tons. Taking into consideration the limited output, heavy shipments of run-of-mine, gas and splint were being made to tidewater. There was also an increased movement of byproduct coal to the West. Mines on the Kanawha & Michigan and the Coal & Coke railroads were in a better position to load than those on the C. & O., owing to a more regular car supply.

The hopes of New River producers for the production of a large tonnage in their field during the week ended Aug. 23 were shattered after the eighteenth, when the supply began to dwindle; during the rest of the week plants were able to load only part time since the number of empties was far below the needs of the mines. Even when cars were available, coal companies were unable to get all their men out or to keep those who did report for duty at work. Dissatisfaction of some miners with those features of the new wage contract applying to strikes was causing some unrest here as in other fields of the state. Producers were discouraged because of their inability to load and ship more coal so as to make up in part for the loss resulting from the railroad strike. Operators of the New River field reported that little New River coal was available for spot buying or for additional contracts. By far the greatest portion of the tonnage produced during the third week in August was shipped to tidewater. During the week the New River Operators' Association held a meeting at which President Wilson's recommendation for control of coal prices and the Senate investigation of coal prices were live topics; operators as a rule opposed any form of government control of the industry because they saw no special reason why the coal industry should be singled out for such attention.

Fairmont, W. Va.

Northern West Virginia fields have best car supply of months. Week ended Aug. 23 sees large shipments to tide. Lake movement of coal also heavy. Operators' association keeps members informed on car situation each day in advance.

Car shortages prevailed pretty generally throughout West Virginia during the week ended Aug. 23; the exceptions to this rule were the Fairmont and other northern coal fields in the state, the mines in the fields mentioned having the best car supply they had had for several months. This supply was sustained throughout the week and as a consequence production leaped upward during the time in question, it being estimated that the Baltimore & Ohio, on the Monongah division alone, handled (during the week) about 6500 cars, equivalent to the heavy loading figures of July, 1918. The only drawback experienced was late placement of cars which, in many instances, prevented some mines from getting a full day's loading. However, the supply of cars was so satisfactory that late placements were, in a sense, overlooked. A power shortage, which developed early in the week, tended to interfere with operations to some extent, almost a day being lost from such a cause. A washout on the railroads along the Monongahela River also interrupted the flow of empties to certain mines in the Fairmont region. It was a week of large shipments to tidewater, the movement of coal for export being unusually heavy, shipments on Aug. 22 breaking all records during recent months. The Lake movement of coal was also heavier in volume than during previous weeks, while shipments of railroad fuel reached a large volume. Coke shipments seemed to be rather light.

Notwithstanding the great car improvement, steps have been taken by the Northern West Virginia Coal Operators' Association to keep members informed of the car situation a day in advance. Men were on duty at the association office in Fairmont until midnight for the purpose of receiving reports from the railroads as to the probable supply of cars and to give this and other pertinent information to members who telephoned for it. In other words, the association is arranging for such car information as will enable each operator to plan his work for the following day and thus reduce the cost per ton of loading the coal. Furthermore, it is intended to have two men on the road developing information of benefit to members and investigating complaints. In short, the association is endeavoring to get the handling of coal at and from the mines down to an exact system which will be of benefit to members.

Bluefield, W. Va.

Cars more plentiful. Pocahontas gains in production during third week of August; however, not in the market at any price. Little change in the Kenova-Thacker district. Production about 70 per cent.

With more empties available during the week ended Aug. 23, the mines of the Pocahontas region were able to make headway in increasing production, the gain being 38,000 tons. Production was increased from 257,000 to 295,000 tons. The loss from a car shortage was cut down from 177,000 to 137,000 tons, a decrease of 40,000 tons, but that still made a car shortage responsible for a 30.9 per cent. loss. However, with additional transportation facilities available, the mines of the district were able to increase their working time by about 400 hours. The loss from labor shortage and mine disability remained about the same—10,000 tons. The total production loss was cut down from 186,000 to 148,000 tons. There was a slight increase in the production of coke. Pocahontas producers found themselves unable to supply the demand for smokeless, numerous inquiries only going to show it was not to be had at any price.

Little change was observed in conditions in the Kenova-Thacker district, production in that field still hovering around 125,000 tons, with a shortage of cars cutting off the production of about one-fifth of capacity or approximately 40,000 tons. Mines in this field were producing up to about 70 per cent. of capacity. During the same period of last year, production was running about 160,000 tons. While there was a heavy car shortage during the week ended Aug. 23, conditions were slightly improving in the week following. Coal from this field was finding a ready market, losses from no market being insignificant.

Huntington, W. Va.

Mines in Logan field operating to one-half capacity. Poor transportation discouraging. Logan operators confer with manager of Eastern Car Pool. Tonnage moved in C. & O. territory.

During the week ended Aug. 23, the heavy loss in car shortage in the Logan field was reduced from 328,000 (figures for the previous week) to 167,000 tons—a cut of 161,000 tons—but during the week mentioned there was still a loss of 43.2 per cent., affecting working time in the mines to the extent of 2683 hours. The total production loss was 50 per cent., or 193,000 tons; and, consequently, mines were only operated to about one-half of capacity. This had been anticipated, owing to the condition of equipment and motive power and to the inability of the Chesapeake & Ohio Ry. to secure empties from connections. A strike at one of the mines in the Logan field also interrupted production but only to the extent of about 3000 tons. The car situation was so discouraging, however, that a committee of Guyan operators spent several days in Pittsburgh in conference with the manager of the Eastern Car Pool in an effort to secure a better supply of empties. On the committee were A. R. Beisel, J. J. Ross and Walter Thurmond.

J. D. Frances and other operators of the Logan field were in Washington during the week beginning Aug. 25, attending the Senate hearing on coal prices, etc. During the week ended Aug. 23 the C. & O. Ry. handled 12,817 loaded coal cars, or approximately 640,850 tons, for the following districts:

	No. Car
New River	2,896
Kanawha	2,846
Coal River	1,137
Guyan	3,884
Big Sandy	1,240
S. V. & E.	589
Long Fork	173
A. C. & I.	52

Paintsville, Ky.

Northeast Kentucky Coal Association board holds important meeting. Committee appointed to testify at coal inquiry at Washington. Extension of markets given much attention. Advantage of Charleston,

S. C., as shipping port for European and South American markets pointed out.

There was a full board meeting of the Northeast Kentucky Coal Association held at Paintsville recently and action was taken on several important matters. A committee o fthree operators from the Big Sandy Coal field was appointed to represent the coal men of northeastern Kentucky at the inquiry being held in Washington, D. C., as to coal shortage, prices, etc. In connection with this investigation at Washington, all oustanding cost sheets of coal companies should be available and it is important that this information be up to date.

The committee on extension of markets reported that already considerable tonnage for Europe has been contracted for and shipment awaits publication of the tidewater rate; purchasing agents are on the ground awaiting this rate to contract for a large volume of foreign business. There seems to be a great demand for export coal and not a sufficient tonnage available, with prices advancing proportionately. With a fair rate to tidewater, the Big Sandy operators consider that their output would materially relieve the situation.

A satisfactory rate to Charleston, S. C., from this field, is considered to be more advantageous to the whole country and to the Big Sandy district, than similar rates by way of the heavily congested parts in the Middle Atlantic—Newport News, Norfolk, Lambert's Point or Curtis Bay. Even with a satisfactory rate to these points, which the Big Sandy field now enjoys, it is not probable that the Chesapeake & Ohio could handle much additional traffic. On the other hand, the capacity of the piers at Charleston are said to have not been anywhere near utilized in the past.

This fact has recently been recognized, says the *Ashland Independent*, by the U. S. Shipping Board. For the first time since the beginning of the European war, government-owned vessels have been allocated to South Atlantic ports. In an endeavor to meet the situation caused by the European coal shortage, the Government is contemplating the use of all available ships, even to freighters as small as 3000 tons capacity. The Charleston, S. C., outlet for Big Sandy coal is also most desirable for supplying the South American markets, and all indications seem to point to rapid development of trade through this channel.

Birmingham, Ala.

The Tennessee Coal, Iron and Railroad Co. about completing big new plant at Getmore, in Jefferson County. It supplants Adger, Johns and Belle Sumter operations. Shortens haul for old plants and opens up new territory.

Construction of houses, a commissary, and mining plant will begin in earnest at the Getmore property of the Tennessee Coal, Iron and Railroad Co. during September, this being taken in the district to mean that the development will be well under way by winter. Approximately 2000 miners will be employed, this being one of the largest single slopes in the South. The slope at Getmore has been under construction for the last two years, and the estimated cost of the plant when completed will be in the neighborhood of $1,250,000. The daily output will be more than 5,000 tons, exceeding the combined output of the Adger, Johns and Belle Sumter mines of the company in Jefferson County where about 1,500 miners were employed. These mines have been closed for several months.

The sinking of the slope at Getmore is thought to be the forerunner of a change in coal mining methods in the Blue Creek field. It is in reality a new opening for the three slope mines at Adger, Belle Sumter and Johns, that will shorten the haul by several miles. Reports now current state that the dumps at these three places will be entirely abandoned, and that the mining operations now being carried on at these points will be shifted to the Getmore and other slopes to be sunk near that point. If these reports are true, it means the moving of three camps bodily—with a population of several thousand—and transplanting them from the mountain to the valley, a distance of three miles.

The Blue Creek field is situated in a basin three miles wide; on the northwest border are situated the Adger, Johns and Belle Sumter slopes. From this point the seam has been worked out for a long distance. The new slope is situated on the southeast rim of the basin, and in addition to shortening the haul, will open up a virgin territory. An erroneous impression has been created by the popular belief that the seam now being worked is about exhausted. It is nearly exhausted for practical purposes, so far as mining operations from the old slopes in the northwest rim of the basin are concerned, on account of the long haul, but the new Getmore slope will make available coal for years to come.

It is not generally known that just underneath the top seam, being worked, there is another seam of almost identical thickness. This seam has been proved at various points by engineers of the Tennessee company, and has been found to be of about an eight-foot average thickness. The sinking of the new slope, at Getmore, is one of the largest undertakings yet begun by the coal mining department of the T. C. I. and R. R. Co. and involved steady employment of a large force of men for two years, the building of six miles of railroad track, the installation of expensive machinery and the erection of a new camp at the tipple. The new washer at this operation will soon be completed.

Anyox, B. C.

Valuable coal lands on Vancouver Island in litigation. Granby company successful in one apeal to Privy Council. History of the case. Another decision of the Council decides the "suit pending" until trial. Granby concern makes third appeal involving E. & N. Ry. Co.

The Granby Consolidated Mining and Smelting Co. has been successful in its appeal to the Privy Council, regarding the Cranberry district coal rights on Vancouver Island, according to a cable to the company's solicitors in Vancouver, B. C. The issue of this litigation, it should be explained, is the coal in 60 acres of land acquired with other blocks of land some 18 months ago; in the opening up and operation of this property, the Granby company has invested considerable capital. The Cassidy collieries—the best equipped of their kind in the Canadian West—are a result of the company's enterprise, and from this source it is proposed taking the coal to supply the new byproduct ovens at Anyox, which will solve the problem of obtaining coke for the large smelting plant at this place.

To revert to the matter of litigation, the case which has had a favorable outcome to the company was brought by a Chinaman, Bing Kee, who asked that he be declared the owner of the coal rights in the 60-acre tract referred to. In 1905 Bing Kee purchased the property from the Ganner estate; the trustees of this estate are Angus Mackenzie and Charles Wilson, two prominent citizens of Nanaimo. Subsequently, the Ganner trustees applied for the coal rights and obtained a Crown Grant to them. The Granby company purchased the Crown Grant from Messrs. Mackenzie and Wilson for $45,000 and Bing Kee entered action to have it declared that his deed included the coal. Unfortunately for him the deed had been lost and the evidence appeared to indicate that only the land was intended to be sold.

While Bing Kee's suit is dismissed, the Granby company's troubles in regard to this coal, are not ended. Another Privy Council decision affecting the same property continues a "lis pendens" (or pending suit) filed by the Esquimalt & Nanaimo Ry. Co., which claims that the Provincial Crown Grant to Joseph Ganner is invalid, on the ground that the same property was granted to the company by the Dominion Government, as part of its subsidy for the construction of the island railway. The action of the Esquimalt & Nanaimo Ry. Co. has not yet come to trial. The Granby company applied to the Supreme Court, of British Columbia, for the right to register title to the land and the coal purchased from the Ganner estate; but it was held then, and the judgment now is sustained by the Privy Council, that the "lis pendens" shall continue until the trial. The Granby company, however, has a third appeal to come before the Privy Council, the contention in this case being that the Esquimalt & Nanaimo Ry. Co. has failed to include the attorney-general of the Province as a defendant in the suit, it being argued that this is a fatal omission, as it is the Crown Grant which he issued which is under attack.

PENNSYLVANIA

Anthracite

Yatesville—A serious mine cave occurred recently in the Cork Lane section when the three tracks of the Delaware & Hudson R.R. dropped over 5 ft., while the Oneonta freight train was passing over. The fact that the freight was going slowly probably prevented a serious wreck, as two of the box cars of the train went into the mine cave. The D. & H. tracks are directly over the Hillside Coal and Iron Co. workings.

Bellevue—The Delaware, Lackawanna & Western R.R. Coal Department intends to erect a large modern breaker here on a site between the Dodge and the Bellevue collieries, it is reported. The breaker when completed will take the output of both the Dodge and Bellevue mines, which is approximately 2200 tons daily. The Bellevue and Dodge breakers are two of the oldest structures of the Lackawanna company, and during the last few years have been closed quite frequently for repairs.

Bituminous

Brownsville—Three men were instantly killed in the Roberts mine at this place recently while riding on a trip. The car on which the men were riding was caught under tons of rock which required several hours to remove.

Pittsburgh—Following the acquisition by J. H. Hillman, Jr., of this place, of the control of the Diamond Coal and Coke Co., the election of the following officials is announced: J. H. Hillman, Jr., chairman of the board; T. W. Guthrie, of Pittsburgh, (president of the other Hillman companies) president; A. R. Budd, vice president and general manager; A. H. Stolzenbach, secretary-treasurer. W. L. Affelder, of Pittsburgh, assistant to the president of other Hillman companies, has been appointed to the same office in the Diamond company. No other changes have been made in the operating personnel. The Hillman interests recently purchased the property of the Brownsville Coal and Coke Co., at Brownsville, Penn., on which are located some abandoned coke ovens and dwellings. Other houses will be erected here for the accommodation of the employees of the Pika mine nearby.

Dubois—Several parties resident here are interested in a new coal operation that is shortly to be started in Jefferson County. G. S. Sink, of this place, is president and superintendent and E. Sink, also of Dubois, is the vice president of the company. Other directors are N. V. Cossbonn, D. M. Straightwell and E. Montgomery.

WEST VIRGINIA

Fairmont—The Consumers' Fuel Co., with an operation at Downs, in Marion County, will send three "safety-first" teams to Pittsburgh to compete in the national field meet to be held on Sept. 30 and Oct. 1. Superintendent Miller of this company has given much time to the drilling of the teams, and has taken great interest in the safety-first movement.

Fairmont—A deed filed in Marion County on Aug. 21, disclosed the purchase of 5660 acres of coal land in Union and Winfield districts. The purchase was made by the Jennings Oil Co. (a West Virginia corporation) from the E. H. Jennings Brothers Co.—a New Jersey corporation. The consideration stated was $1 and other good and valuable considerations.

Logan—Deeds placed on record here show that C. R. Conner and T. Truxton Stiles, Jr., acquired by purchase a valuable undeveloped tract of coal land in the Logan field.

This tract was purchased by Huntington men from the Rocky Creek Coal Land Co., of Cleveland, Ohio. The property is situated on the Guyandotte Valley, branch of the Chesapeake & Ohio Ry. at Chapmansville.

Williamson—After operating a plant for two years at Himler, Mingo County, W. Va., the Himler Coal Co. has extended its operations into the Buck Creek section of Martin County, Ky., near Warfield, Ky. The officers of the company are Martin Himler, president and general manager; Louis Hanczinger, vice-president; Eugene J. Lang, secretary and treasurer; W. M. Miering, general superintendent. The company hopes to be able to produce about 2000 tons of coal a day at its new operation. A new town will be established. The Himler Coal Co. is a co-operative concern, its stockholders being mostly miners of Hungarian origin.

Charleston—Many wagon mines are reported to have started up throughout West Virginia during recent weeks. An impetus has been given to the production of coal at these small operations by the increase in the price paid for run-of-mine fuel. During the war many of such mines were operating and producing coal in this state at the rate of 1,000,000 tons a year. However, when the Fuel Administration no longer allowed a price of 75c. a ton over and above that permitted other mines, then it became no longer profitable to work the wagon mines. Of late prices have reached such a level as to justify these small mines in getting out coal again.

Charleston—Accidents during July, in West Virginia, having a fatal ending ran heavier than usual, there being a total of 46 casualties during the month; one explosion—that at the Carswell mine in McDowell County—costing, it will be remembered, six lives. There were 25 lives lost from one cause—fall of roof and coal, the gas explosion taking the next largest toll of six. There were more deaths than usual from electricity—five in all, while the number of fatal mine-car accidents was three. One motor accident resulted fatally and a mining machine was responsible for the death of one miner. There were only five deaths on the outside of the mines, mine cars killing two, electricity one, a motor one, and one being killed from a miscellaneous cause. McDowell County had by all odds the largest number of deaths—16, more than a third of the total. Standing second on the list was Raleigh with five casualties; Logan with four; Kanawha and Brooke with three each; Fayette, Marion, Monongah, Taylor and Tucker, with 2 each; Harrison, Mercer, Mingo, Ohio and Upshur with one each. Twenty-nine Americans and 17 foreigners were killed.

KENTUCKY

Madisonville—The St. Bernard Mining Co., of this place, has nine operations in Hopkins County, in the western part of the state, and an annual production of 1,500,000 tons when running full capacity. This company is now completing a power plant at an outlay of half a million dollars, it is said. Two thousand miners are employed at the plants of the St. Bernard company.

Hazard—Construction and development work goes steadily on in Perry County, Ky., says the **Manufacturers' Record.** This county, of which Hazard is the county seat, is in the southeastern part of the state. Among the fields opened up here in recent years is Lott's Creek; one of the new companies about to start shipping coal in this field is the Indian Head Coal Co., made up of New York and Pennsylvania people. There are seven operations shipping coal on this creek, the Indian Head company is about to start up and another concern is organizing. It is expected that the production of the Lott's Creek field will be the largest around Hazard; the Hardy-Burlingham Mining Co.'s big tipple here is planned for a capacity of 5000 tons. New territory is being opened up below Hazard on the Louisville & Nashville R.R. and gives good promise if conditions are improved. Surveys have been made for a branch of the L. & N. above Hazard up Leatherwood Creek and a number of coal leases have been taken. The Carr's Fork branch of the L. & N. will be opened up shortly, it is said, and six or eight companies are getting in readiness to begin shipping coal when the railroad is completed.

ILLINOIS

Duquoin—The "Majestic" mine of the Equitable Coal and Coke Co., of Chicago, has been temporarily idle as the result of a fire in the workings of the mine about a mile from the shaft bottom. The local mine-rescue team, of which James Robinson is superintendent, after a hard fight succeeded in extinguishing the flames and the mine is now working as usual.

Foreign News

Sydney, N. S.—W. D. Ross, vice president of the Nova Scotia Steel and Coal Co., states that the company's coal mines are now operating at their full capacity and that the outlook shows a steady improvement. Some improvements are being made at the plant and further extensions are under consideration. The steel plant at New Glasgow is operating at 60 per cent of capacity.

Tokio, Japan—The output of the coal mines of Japan increased from 21,083,000 tons in 1913 to 22,901,000 tons in 1916 and 27,500,000 in 1918. The growth of the industry is shown by the increase in industrial consumption from 7,530,000 tons in 1914 to 10,426,000 tons in 1916, and 16,020,000 tons in 1918. As 16 new mining companies were established in Hokkaido, Kynshu, and other islands, it is expected that the production will be considerably increased this year. The total consumption of coal in Japan was 18,055,000 tons in 1913, 20,440,000 tons in 1916, and 25,980,000 tons in 1918, thus leaving relatively little margin for exports.

Personals

J. E. Graham, sales engineer, is now assisting Mr. Nash, the manager of the Huntington district of the Hyatt company.

L. W. Brown, Warwood, W. Va., formerly superintendent of the Richland Coal Co., has been appointed general superintendent of the Apex Coal Co., Apex, Ohio.

Herbert E. Preisch, of Buffalo, N. Y., has been appointed manager of mines of the Buffalo-Kanawha Coal Co., with headquarters at Putney, W. Va.

Harry M. Giles has been appointed general superintendent of the South Philadelphia works of the Westinghouse Electric and Manufacturing Co. to succeed the late Oscar Otto, killed last month.

Guy S. Hamilton, formerly advertising manager of the American Steam Conveyor Corporation, of Chicago, has been appointed editor of the "Booster," the corporation's newly established sales organ.

Superintendent Thomas Griffin and **Chief Engineer J. P. Broderick,** of the E. J. Scott Coal Co., operating a strip mine near Duquoin, Ill., have resigned their positions with the company to accept positions in St. Louis

Professor Robert Z. Virgin, of the mining extension department of the West Virginia University, at Morgantown, has tendered his resignation to join the mining extension department of the Carnegie Institute of Technology, at Pittsburgh, Penn.

H. E. Moran, until recently eastern representative of the Main Island Creek Coal Co., has been given charge of the Norfolk office and also the New York office, at No. 11 Broadway, of the recently organized Lake and Export Coal Corporation, of Huntington.

L. A. Wyman has been appointed sales manager of the Burton, Beidler & Phillips Co., of Cleveland, Ohio, producers and shippers of coal and coke. Mr. Wyman was formerly with the Ingersoll-Rand Co. The other officers of the Cleveland company are: J. P. Burton, president; R. N. Smith, treasurer.

N. S. Braden, former sales manager, has recently been elected vice president of the Canadian Westinghouse Co., Ltd., of Hamilton, Ont. **H. M. Bostwick,** assistant sales manager, has been appointed sales manager, to fill the vacancy created by Mr. Braden's promotion.

Paul Sutcliffe, formerly advertising manager of the Edison Storage Battery Co., has been appointed manager of the Industrial Truck and Tractor Department of the company. **M. D. Salsbury,** formerly assistant advertising manager, has been made advertising manager.

George L. Carter is reported to have sold his entire coal mining interests in southern West Virginia and southwest Virginia to one of the leading producers and shippers of bituminous coal in the country. The consideration is said to be approximately $8,000,000.

George Arbuckle, mine manager for the Victory Collieries Co., at Tamaroa, Ill., has resigned his position with that company to accept a similar one with the Union Colliery Co., of St. Louis, Mo., at its Kathleen mine at Dowell, Ill. This mine was just recently completed; it is located near Duquoin in Perry County.

H. L. Van Trump has been appointed superintendent of the plant of the Weganoke Coal & Coke Co., at Lowe, W. Va., having been transferred from Merrimac where he was superintendent for the White Star Mining Co. **Charles W. Murphy** has been appointed superintendent at Merrimac. R. D. Patterson and associates own both mines.

A. B. Reynders, former director of production of the Westinghouse Electric and Manufacturing Co., at East Pittsburgh, Penn., has recently been made works manager of its new East Springfield plant. **A. E. Kaiser,** formerly assistant to the director of production has been appointed to the position made vacant by Mr. Reynder's new appointment.

T. H. Williams, who has been mine inspector at Fernie, B. C., has retired and has been succeeded by A. Strachan, formerly inspector at Merritt, B. C. **D. McLean** has been appointed inspector at Merritt; this is a new appointment. He conducted a mining school at Ladysmith, B. C., before going to the front, and on his return managed one of the mines in the Nicola-Princeton coalfield for a few months.

R. N. Jones, of Wilkes-Barre, Penn., has been placed in charge of the Clarksburg offices of the Alden Coal Mining Co., Inc., of New York, suceeding **Frederick J. Kandt,** resigned. The latter is embarking in business for himself at Clarksburg, W. Va. Mr. Jones has long been a mining engineer in the anthracite fields of Pennsylvania. He recently returned from overseas, where he was in the balloon corps.

R. J. Stegall has resigned as county clerk of Fayette County, W. Va., to assume charge of the accounting systems of the companies operated by Geo. M. Jones and associates of Logan County, with headquarters at Amherstdale. It is said that he has secured an interest in the various Logan County companies. Mr. Stegall served as county clerk of Fayette County for a period of five years.

A. Pflazer, who for some time past has been an inspector connected with the Louisville headquarters of the Kentucky Actuarial Bureau (the fire underwriters' rating bureau), has been assigned to the management of a new inspection office at Pineville, Ky. From this point he will handle inspection of coal property insurance risks in the Harlan, Jellico and Straight Creek fields, as well as in the Middlesboro section. Headquarters will be maintained at Pineville, but Mr. Pflazer will spend almost his entire time in the field.

Geo. D. Rowland, of Cleveland, Ohio, has been appointed general manager of the Hanover Coal Co., with headquarters in Wheeling, W. Va. The operation of the company is at Burgettstown, Penn., on the Pan Handle railroad where the company has about 2000 acres of Pittsburgh coal. Up until two years ago Mr. Rowland was the sales manager of the Richland Coal Co., at Wheeling. At that time he was made president and general manager of the Coal Ridge Mining Co., of Cleveland, and about a year later he also became vice president and general manager of the Apex Coal Co., also of Cleveland.

Obituary

Robert A. Dornan, aged 65, died at his home in New Alexandria, Penn., on Aug. 25. He was president of the Dornan Coal Co.

John C. Miles, auditor for the Philadelphia & Reading Coal and Iron Co., died at Pottsville, Penn., on Aug. 25. He was 60 years of age and had been in the employ of the Reading almost a lifetime, starting out as a coal weigher at Mahanoy Plane.

Coming Meetings

The United Mine Workers will hold a convention at Cleveland, Ohio, beginning Sept. 9.

The Bureau of Mines on Sept. 30 and Oct. 1 will hold a national first-aid and mine-rescue contest at Pittsburgh, Penn., included in the events will be the dedication of the Bureau of Mines Building.

The National Safety Council will hold its annual meeting Oct. 1 to 4 at Cleveland, Ohio. Secretary, S. J. Williams, Chicago, Ill.

New York Coal Merchants' Association will hold its annual meeting Sept. 11-13 at Alexandria Bay, N. Y. Executive secretary, G. W. F. Woodside, Albany, N. Y.

American Institute of Mining and Metallurgical Engineers will hold its fall meeting Sept. 22 to 26 in Chicago, Ill. Chairman Chicago meeting, Carl Scholz, 547 West Jackson Boulevard, Chicago, Ill.

Indiana Retail Coal Merchants Association will hold its annual convention Sept. 17 to 18 at the Hotel Severin, Indianapolis, Indiana. Secretary, R. R. Yeagley, Fidelity Trust Building, Indianapolis, Indiana.

National Exposition of Chemical Industries will hold its first annual meeting at the Coliseum and First Regiment Armory, Chicago, Ill, during the week of Sept. 22. Manager, Charles F. Roth, 417 South Dearborn St., Chicago, Ill.

Alabama Safety Association will hold a field meet Oct. 25 at Birmingham, Ala., at which first-aid and mine-rescue contests will be held. W. B. Plank, engineer in charge of the Mine Rescue Bureau at Birmingham, Ala., is chairman of the Board of Managers.

American Mining Congress will hold its 22nd annual convention Nov. 17-22, at the Planters Hotel, St. Louis, Mo. Secretary J. F. Callbreath, Munsey Bldg., Washington, D. C.

Trade Catalogs

Blaw Cableways. Blaw-Knox Co., Pittsburgh, Penn. Bulletin No. 200. Pp. 16; 6 x 9 in.; illustrated. Shows details and general views of cableway in operation.

Vulcan Soot Cleaner. The Vulcan Soot Cleaner Co., Du Bois, Penn. Pp. 8; 8½ x 10¾ in.; illustrated. Notes six vital features of Vulcan soot cleaner superiority and also the cost of the cleaners.

"Hard Service" Portable Electric Tools. Van Dorn Electric Tool Co., Cleveland, Ohio. Catalog A. Pp. 40; 6 x 9 in.; illustrated. Complete information about Van Dorn drills, reamers and grinders.

Blaw Single Line Clam Shell Buckets. Blaw-Knox Co., Pittsburgh, Penn. Booklet. Pp. 20; 5¼ x 7¾ in.; illustrated. These completely automatic buckets are illustrated and briefly commented upon.

Osgood. The Osgood Co., Marion, Ohio. Booklet. Pp. 31; 8½ x 11½ in.; illustrated. Osgood steam shovels, cranes, clamshell outfits and dredges are here described and illustrated by fine cuts.

Type B Erie Locomotive Crane. Ball Engine Co., Erie, Penn. Bulletin S-30. Pp. 6 (folder); 8½ x 11 in.; illustrated. The bulletin shows the different uses to which the Erie Crane can be put with profit.

Van Dorn Portable Electric Drills and Grinders. Catalog 19. Van Dorn Electric Tool Co., Cleveland, Ohio. Pp. 44; 3⅝ x 8⅜ in.; illustrated. Describes and illustrates the drills, reamers and grinders made by this company.

Buckeye Multiblade Fan. The Buckeye Blower Co., Columbus, Ohio. Bulletin No. 101. Pp. 51; 7¾ x 10¾ in.; illustrated. Complete details about the various styles of this type of fan to assist purchasers in selecting equipment.

W-S-M Automatic Ore Unloaders.—The Wellman-Seaver-Morgan Co., Cleveland, Ohio. Bulletin No. 27. Pp. 12; 8½ x 11 in.; illustrated. This bulletin is a description of installations of automatic ore unloaders on the Great Lakes.

Portable and Stationary Mine Pumps. The Deming Co., Salem, Ohio. Bulletin No. 310. Pp. 23; 6¾ x 9½ in.; illustrated. This bulletin gives information about its horizontal, single and double-acting pumps; typical sizes being selected for each class as an illustration.

New Europe. The Deister Concentrator Co., Fort Wayne, Ind. Map 13 x 19 in. This map gives information about the changes in the boundaries of European countries as a result of the war. The Deister company will be glad to send the map to anyone upon request.

The Blaw System. Blaw-Knox Co., Pittsburgh, Penn. Catalog No. 16. Pp. 128; 6 x 9 in.; illustrated. A book of descriptive text and numerous photographs which illustrate the adaptability of Blaw steel forms for concrete work of all kinds.

Mine Car Lubrication. By E. N. Zern, E. M. Swan & Finch Co., New York. Pp. 18; 5½ x 8½ in.; illustrated. A bulletin on various oils and greases and roller-bearing equipment for mine cars. Distributed complimentary by Swan & Finch Co., manufacturers of "Slo-Flo" lubricant.

The "Ironclad-Exide" Battery. The Electric Storage Battery Co., Philadelphia, Penn. Booklet—Form 881-R. Pp. 24; 4 x 6¼ in.; illustrated. This is a sketch of the development of the "Ironclad-Exide" battery, which is a revised and up-to-date edition. It is now ready for distribution.

Cutler-Hammer Mine Duty Apparatus. Cutler-Hammer Manufacturing Co., Milwaukee, Wis. Booklet. Pp. 8; 8½ x 11 in.; illustrated. This booklet makes special reference to the Cutler-Hammer mine apparatus installed in the plant of the St. Louis Smelting and Refining Co., at St. Francois, Mo.

Recent Coal and Coke Patents

Stoker. J. S. S. Fulton, assignor to United Stokers Corporation, Chicago, Ill., 1,285,671. Nov. 26, 1918. Filed Dec. 6, 1917. Serial No. 205,869.

Dustless Ash Sifter. A. C. and C. Netti, Brooklyn, N. Y., 1,286,068. Nov. 26, 1918. Filed June 28, 1918. Serial No. 242,476.

Coal Chute. W. V. Heinz, La Salle, Ill., 1,286,618. Dec. 3, 1918. Filed Jan. 25, 1917. Serial No. 144,387.

Briquetting Machine. W. D. Alexander, Los Angeles, Cal., 1,291,705. Jan. 21, 1919. Filed Oct. 15, 1917. Serial No. 196,568.

Safety Device for Mines. A. G. Biondi, Los Angeles, Cal., 1,292,236. Jan. 21, 1919. Filed Sept. 6, 1918. Serial No. 252,962.

Fastener for Sectional Coal Auger Nuts. J. H. Wenzlick, assignor to Fulton Tool Works, Fulton, Ohio, 1,286,859. Dec. 3, 1918. Filed May 3, 1916. Serial No. 95,025.

Industrial News

Welch, W. Va.—The Central Pocahontas Coal Co., is planning for the immediate erection of about 100 miners' houses at its mines at Capels.

Chicago, Ill.—The Wisconsin Steel Co. is planning to increase the capacity of its coal properties at Benham, as regards new development work. It is proposed to double the present output.

Danville, Va.—The Merrill Coal Mines, recently incorporated, are planning for extensive operations on their properties near Henlawson. A new connection will be constructed with the Cheaspeake & Ohio R R.

Powellton, W. Va.—The Elkhorn Piney Coal Co., Huntington, W. Va., is planning for the erection of 32 one- and two-story houses at its local properties for miners' use. Garner Fletcher is manager.

Pulaski, Va.—Notice has been filed by the Heuser Coal Corporation of an increase in its capital from $50,000 to $100,000, to provide for proposed business expansion. C. W. Heuser is president.

Seneca Falls, N. Y.—On Sept. 1 the Goulds Manufacturing Co., of this place, opened a district sales office in Detroit, Mich., in charge of E. B. Gould, who has recently returned after 18 months' service in France.

Canton, Tex.—The Hercules Power Co., now being organized by A. B. Saline and associates, with capital of $10,000,000, will mine lignite coal on a property which has been leased, totaling about 20,000 acres. A byproduct plant will also be operated in connection with an electric power plant.

Bluefield, W. Va.—It is reported that about $200,000 is to be expended by the Ashland Coal & Coke Co. on the erection of a modern steel tipple at the company's plant in the Pocahontas field. The company may also build another tipple during the coming winter.

Cleveland, Ohio—The Atlas Car and Manufacturing Co., of this place, states that the Coast Equipment Co., Merchants' Exchange, San Francisco, Cal., has been appointed the representative for the Atlas company for California and Nevada and requests that all inquiries from this territory should be addressed to them.

Pittsburg, Kan.—The Bucyrus Company, of South Milwaukee, Wis., has established an office at Pittsburg, Kan., for the convenience of coal stripping contractors and coal mining companies in ordering repairs for steam and electric shovels operating in the Pittsburg district. A. M Nielsen will be in charge.

New Cumberland, W. Va.—The West Virgina-Pittsburgh Coal Co., of Pittsburgh, Pa., has commenced the construction of a new power plant at its La Belle mines; the company is also planning for the construction of about two miles of railroad at the La Belle, Colliers and Gilchrist mines. The work is estimated to cost about $100,000.

Grafton, W. Va.—The Connellsville, Cumberland and Baltimore divisions of the Baltimore & Ohio R.R. are making record movements of coal from this vicinity. About 1,000 cars daily are being shipped from the Fairmont district, about 600 cars per day from the Connellsville section, 300 from the Somerset regions, and about 100 from the Georges Creek district.

Duquoin, Ill.—The Sunrise Coal Co. has announced its intention of resuming operations at its Cambria mine in Williamson County. The plant has been closed down for some time. An increase has recently been made in the capital stock of $50,000. New equipment and machinery will be installed which will increase the output approximately 50 per cent.

Chicago, Ill.—It is announced that the Wood Equipment Co., of this place, will hereafter be known as the Car-Dumper and Equipment Co. It is considered that the new name will bettter represent the business of this concern whose principal equipment is rotary dumpers for mine and railroad cars. The general offices of this company are at the company's plant 1216-22 E. 75 St., (Grand Crossing) Chicago, Ill.

Clarksburg, W. Va.—The Philadelphia office of the Orr Coal Mining Co., which has heretofore operated mines in the Harrison County field, has been closed following the transfer of all the holdings of that company to the Hudson Coal Co., organized a short time ago with a capital of $1,000,000. A part of the new company's product in the East will be handled by the Fuel Corporation of America.

Pineville, W. Va.—One of the largest companies organized in recent months, especially in southern West Virginia, is the Barnsdall Coal Co., presaging important development in the smokeless field of Wyoming County, in the Guyan district of southern West Virginia. The new company has a capital stock of $1,000,000. It was organized by F. H. McQuiston, C. B. Mehard, A. W. Wall, T. G. McMasters and Frank Braman.

Huntington, W. Va.—Additional coal land in Boone County, W. Va., will be made accessible to development by the construction of 18 miles of railroad through the heart of the timber region of that county, heretofore undeveloped. Announcement has been made of the awarding of a contract by the Pond Fork and Bald Knob R.R. for the construction of the railroad to Boxley Brothers of Huntington. This road will follow the general route of Pond Fork.

Chicago, Ill.—The American Steam Conveyor Corporation, of this place, announces the appointment of Morton McI. Dukehart & Co. as its special representative in Baltimore and surrounding territory, including Maryland, the District of Columbia, and a few counties in Pennsylvania, Delaware, West Virginia and Virginia. The concern representing the American company consists of Messrs. Dukehart and Denise—both power plant engineers of long standing and sales engineers of considerable experience.

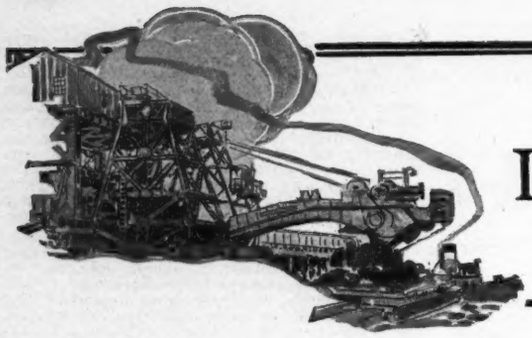
Duquoin, Ill.—The United States Reduction and Atomizing Co., are now rushing the construction of their plant for the recovering of the byproducts of coal mined in southern Illinois mines. The plant, which is located near Herrin, in Williamson County, will cost in the neighborhood of $100,000 and will employ several hundred men. The company has also purchased a tract of land adjacent to the plant and will erect houses for their employees.

The method the company will use is a new inventio nwhich has not been used extensively in any part of the country as yet. It was lately proved successful by W. L. McLauglin, of Decatur, Ill., and the U. S. Reduction & Antomizing Co. was formed through his efforts.

Charleston, W. Va.—The Kanawha & Hocking Coal and Coke Co. contemplates the construction of a tipple at its No. 111 plant at Carbondale. It is said that this tipple will be equipped with conveyors, shaker screens, loading booms and other modern equipment. This company has 6000 acres of coal land leased in Kanawha and Fayette counties and owns in fee, 7000 acres in Fayette County and 14,000 acres in Kanawha County. Eight mines and four coke plants are operated on the Kelly's Creek R.R. The company ships its coal by both rail and river. J. S. McKeever is the general superintendent of the company.

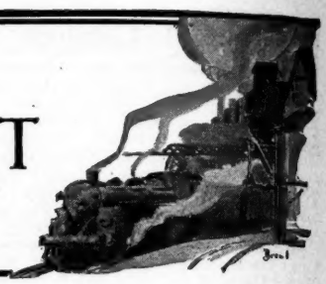
Charleston, W. Va.—Charleston business men are behind a large new company—the Camp Creek Coal Co.—which has been organized to mine coal in Stonewall district of Wayne County. The new company has a capital of $300,000. It was organized largely through the efforts of L. S. Massey, J. Walter Webb, Reed Bigley, L. W. Hamilton and L. A. Tinder. The company has acquired 2039 acres of coal land, the seam being from 6½ to 8 ft. thick. The officers of the new concern are: L. A. Tinder, president; J. Walter Webb and Reed Bigley, vice presidents; L. C. Massey, treasurer and L. W. Hamilton, secretary.

Chicago, Ill.—By order of the Federal Court, the O'Gara Coal Co. has been discharged from bankruptcy and all the property has been turned over to the corporation. This company's affairs will henceforth be conducted by the following officials: Frank H. Woods, president; John B. Russell, secretary; Charles M. Moderwell, general manager. The O'Gara company states that during the period of the trusteeship, the company's properties were put in excellent physical condition and that new machinery and equipment will be constantly added whenever such improvements will assure better preparation of coal or tend to reduce costs. The present capacity of the O'Gara mines is about 15 000 tons a day, with full labor and car supply.



MARKET DEPARTMENT

EDITED BY ALEX MOSS



Weekly Review

Easing Up in Demand Does Not Bring Lower Prices for Soft Coal—Export Demand Brisk—Labor Troubles Interfere with Many Operations—Anthracite Situation Looks Bright—Output Steadily Increasing

ALTHOUGH there was a noticeable easing up in the demand for bituminous coal during the past week, this did not affect prices in the least. Production is steadily increasing, the total tonnage of soft coal mined during the week ended Aug. 23 being estimated at 10,671,000 net tons. If this rate is kept up for the rest of the coal year, much talk of the threatened shortage will go for naught. Maximum production depends on demand and an efficient movement of railroad cars to and from the mines.

The high-grade soft coals are most in request. Inquiries are being made, too, for good grades of gas coal, but only a small tonnage is available. The major part of the tonnage of high-grade coals produced each week is covered by contract.

Many inquiries are coming from England, France and Italy for fuel, the best American coal being specified. Exports of coal to Italy from the United States increased from 10,000 tons in January of this year to 67,000 tons in June.

Mines in the Southwest are losing considerable time because of labor troubles. This is also true of operations in Illinois, where mines are losing a third of their production each week because of extended strikes. Car supply to the mines has shown slight improvement.

The anthracite situation, taken as a whole, looks better than at any other time this year. Production is being maintained at a good rate, and shipments for the first four months of the present year show a substantial increase over the corresponding period of 1918.

Egg and stove sizes of anthracite are most in demand, but the pressure for these coals is easing off somewhat. Dealers in New England are clamoring for more hard coal, and demand from the West and from Lake Ports is also insistent. Output is steadily increasing, however (for the week ended Aug. 23 it is estimated at 1,868,000 net tons), and no particular anxiety is felt as to the outcome if transportation and labor conditions do not interfere with mining.

WEEKLY COAL PRODUCTION

The increase in production of bituminous coal in the week of August 23 to 10,671,000 tons from 9,089,000 the previous week represents a gain of 17.6 per cent. Whereas production in the week of August 16 was 3,000,000 below the corresponding week of last year, that for the week of August 23 is but 3,000,000 below the high level of 1918 at this time. The recovery to a new high level for the year is attributed to a quickening of demand and the abatement of labor troubles, mainly on the railroads.

The production of anthracite, like that of bituminous coal, recorded a good increase in the week of August 23, the output being estimated at 1,868,000 net tons, compared with 1,642,000 tons the week of August 16.

Improved demand was general in the week of August 16, nearly every district reporting less time lost on account of no market than in the preceding week. The general average for the country of time lost because of lack of business declined from 8.8 per cent. in the week of August 9 to 4.8 per cent. the week of August 16. Without reports from the Southwest, where strikes have prevailed for several weeks, the time lost because of labor trouble increased from 4.9 to 9.4 per cent. Illinois mines lost a third of the week because of labor troubles. Southern Ohio, western Pennsylvania, and Fairmont were the only districts to report improvement in car supply, every other district reporting either no change or greater losses of time through lack of cars. The average for the country of mine operating time lost on account of transportation disability was 25.7 per cent. in the week of August 16 compared with 22.5 per cent. in the week preceding.

Beehive coke production continued to increase, the estimated output in the week of August 23 being estimated at 414,683 net tons compared with 387,000 tons the preceding week and 592,800 tons in the corresponding week of last year. Although production of beehive coke this year to date, 12,000,000 tons, is 8,000,000 tons or 40 per cent. below last year, the supply appears to be ample to supply the demand.

The drop in production of bituminous coal the first half of August is reflected in the lake movement. The dumpings at lower Lake Erie ports in the week of August 16 are reported as 540,925 tons compared with 973,047 tons the preceding week and 821,983 tons the corresponding week of last year.

BUSINESS OPINIONS

Marshall Field & Co.—Current wholesale distribution of dry goods was very largely in excess of the same week a year ago. Orders from road salesmen for immediate delivery were almost double those of the same period of 1918. New lines offered for spring delivery are being accepted in a very satisfactory manner. Customers have been in the house in much larger numbers. Collections are excellent.

American Wool and Cotton Reporter—The August quiet has continued in the Boston wool market during the week under review, but the situation is strong. Demand for fine wools prevails, although there is some request for medium grades. It is largely a waiting game with many of the dealers, and some of them are becoming impatient because medium wools are not called for more than they are at the present time. The actual position of cotton has not changed, although the price is lower.

Dry Goods Economist—Judging from expressions obtained from the members of the Retail Credit Men's National Association at their convention in St. Paul last week, the dry goods and department stores all over the country are enjoying an unprecedented demand. In every section farmers, skilled workers and laborers in various industries are buying goods of higher cost and finer quality than they consumed in former years and they raise no objection to the prices asked. In fact, having no knowledge of the value of the goods, they do not realize the extent to which selling prices have been advanced.

Atlantic Seaboard

BOSTON

Prices firm but market listless. Spot demand very light. Higher grades practically out of market. Low volatiles in fair request at New York and Philadelphia piers. Export and bunker trade steady. Gas coal inquiry not so strong. Hampton Roads loading improves. Anthracite movement continues disappointing..

Bituminous—The market this week shows no material change. Prices are upheld more by the demand in other territory than in New England, for here there is very little inquiry except for small tonnages. There is no comprehensive buying at the moment, although one or two large factors are in the market, presumably trying to cover the arrears on contracts taken early in the season. There is some anxiety also on the part of large steam-users as to possible railroad tie-up in September, but this does not begin to have the influence on buyers that might be supposed. On all grades prices are apparently firm, no weakness having been disclosed. Most shippers, however, report only hand-to-mouth business. Buyers are still reluctant to pay current prices except for spot shipment, and this in spite of car shortages and probable transportation interruptions of more kinds than one.

A thorough canvass of this market shows only a light demand for spot coal. Consumers are resting easily on present stocks, which are ample for the next few months. So much in the industrial situation is uncertain that the smaller buyers especially are disinclined to make further purchases. Then, too, a large number of steam-users are relying upon contracts made in the spring at prices then current. In some quarters the arrears on these contracts are considerable, but it is doubtful whether there will be the demand in the fall that has been expected from this class of buyers. It remains a fact that this year there is

much more "free" coal available than is usually the case. Operators generally have anticipated an active market and for that reason there are fewer contracts on file.

The demand for low volatiles at the tidewater ports has practically lifted the fancy grades out of the market for delivery all-rail. Prices have been attractive enough to influence this movement and for the most part current inquiries in this market have to be met with only the medium to fair grades that are not so eligible for similar and export trade.

At the Philadelphia and New York piers there has developed a ready market for low volatiles of passable grade. Steamers for offshore destinations have frequently been obliged to wait while coal was accumulated. There has also developed some inquiry for shipment to Long Island Sound ports and along the Maine coast to consignees who have misgivings over the prospects all-rail. Prices at the piers are, therefore, reasonably firm and shippers continue to buy odd lots from one another to make up the tonnage required on their obligations.

At all the ports, Hampton Roads included, the export and bunker trade continues steady, with practically no let-up in the demand. For Pocahontas and New River $6.00@6.25 is paid with no hesitation, and while that kind of market continues there is small chance of any more of these coals coming to New England than is absolutely insisted upon in fulfillment of old contracts. Apparently the export trade is not expected to slump for several months, if then, and it is the one factor in the present situation that gives any buoyancy to the current market.

Gas coal inquiry is drifting somewhat. There is not the demand that developed a few weeks ago when there were rumors of acute car shortage in western Pennsylvania. Many of the shippers of producer gas coals have refrained from contracting more than 60 per cent. of their normal output and it is quite likely that an amount of free coal in September will have the effect of depressing prices from the premiums paid early in August.

Pocahontas and New River are again moving in fair volume to the Virginia terminals for tidewater dumping. The accumulation of bottoms due to the marine-workers' strike in July has now been cleared up. There is more berth-room available and steamers lately have been cleared with much better dispatch. Receipts at this end continue very light and more than one rehandling pier in New England that last year was bustling with activity is this year idle most of the season. Prices on cars at Providence and Boston show little change. Now that loading conditions have improved at Hampton Roads the item of demurrage has been eliminated for the present.

Current quotations of bituminous at wholesale range about as follows:

	Clearfields	Cambrias and Somersets
F. o. b. mines, net tons	$2.60@3.10	$3.00@3.60
F. o. b. Philadelphia, gross tons	4.79@5.35	5.20@5.80
F. o. b. New York, gross tons	5.10@5.70	5.50@6.20
Alongside Boston (water coal), gross tons	6.85@7.35	7.10@7.85

Georges Creek is quoted at $3.70 per net ton, f. o. b. mines.

Pocahontas and New River are quoted at $6.00 @6.50 per gross ton f. o. b. Norfolk and Newport News, Va., in response to export demand. There continue practically no sales for coastwise shipment.

Anthracite—There are few encouraging signs on domestic sizes. Shipments from New York come forward with exasperating slowness and from Philadelphia the movement is practically nil. The Reading fleet is still paralyzed over a wage dispute and in that respect there seems no immediate prospect of change. Meanwhile, dealers all along the coast are waiting with increasing anxiety for coal to come forward.

Not much appears in the newspapers about the extremely light stocks of New England retailers, but before September is half gone it is expected that a howl will go up from consumers who have their coal ordered, but will not be able to get it in. The indications are that there will be increasing pressure for egg, stove and chestnut as the season advances.

NEW YORK

Local dealers are ready to take care of heavier shipments of egg and stove. Receipts here show increase due to railroad troubles in other sections. Final monthly increase takes effect. Bituminous market hit by holiday and demand drops; quotations remain firm. Consumption of oil here increasing. Many new inquiries for coal for export.

Anthracite—The local trade continues to be in the market for considerable tonnages, although shipments show a big improvement. These increased tonnages have gone a long way toward reducing the number of unfilled orders on the retail dealrs' books, but a great many still remain. There is no change in the situation regarding sizes wanted. Egg and stove head the list with chestnut a close third. There is not so much pressure being brought to bear for deliveries, retail dealers being in a position now to take care of their customers provided they received their percentage of future shipments.

With the railroad troubles in New England at an end, all-rail shipments which were being made on a large scale are now resumed and it is expected that receipts here for local delivery will not be so large as they were the past few weeks. Dealers in the New England States claim they are not getting coal as fast as they would like. The fear that they might have to pay higher freight rates before long has led them to urge heavy deliveries both by rail and by water.

Reports of coal handled and on hand coming from Western points are not encouraging. More coal is wanted and shipping agents at Lake ports say their stocks are running low.

The situation as a whole looks better than at any time this year. Production and shipments are strong, and for the first four months of the present coal year show a substantial increase over the corresponding period of 1918.

In this market the sizes strongest in demand are egg and stove, but as previously said the pressure is not so heavy as it was a few weeks back. However, dealers could easily take care of a much larger tonnage. There is a bigger supply of chestnut and pea on hand, but those sizes are by no means a burden. Dealers are willing to take a fair tonnage of these coals is assured of reasonably good-sized quantities of the larger coals.

The buckwheat coals are not plentiful, but this condition is due to the non-operation of the washeries.

Railroad reports show that 6668 cars of anthracite were handled over the local dumps during the week ended Aug. 29, an increase of 426 cars over the previous week. During the first 30 days of August the dumpings were 26,978 cars as compared with 25,542 cars in July and 32,494 cars in August of last year.

The last monthly advance of 10c. per ton for egg, stove, chestnut and pea took effect on Sept. 1, bringing the company prices up to the full winter schedule.

Quotations for company, white ash coals, per gross ton, at the mines and f.o.b. New York tidewater lower ports, follow:

	Mine	Tidewater
Broken	$5.95	$7.80
Egg	6.35	8.20
Stove	6.60	8.45
Chestnut	6.70	8.55
Pea	5 30	7.05
Buckwheat	3.40	5.15
Rice	2.75	4.50
Barley	2.25	4.00

Bituminous—The holiday this week struck the local market and there was falling off in demand. Prices, however, did not suffer and there was no tendency on the part of shippers to dispose of their holdings at prices that indicated sacrifices. Coal at the docks while plentiful was not a drug, and although there were numerous embargoes there was a good movement and prices held up.

The high-grade coals were in good movement and there were many demands for stray lots. Many inquiries were received by shippers of the good grades of gas coal, but there was only a small tonnage available.

Fuel conditions abroad have resulted in local shippers receiving many new inquiries for coal, but the best grades are solicited. The majority of these inquiries come from England, France and Italy, with a good sprinkling from other countries. Importation of coal to Italy from the United States increased from 10,000 tons in January to 67,000 tons in June.

The tendency on the part of coal users to use oil instead has taken hold of many local consumers, and a large number of applications for permits to store fuel oil have been received by the local Fire Department officials. As a result of these applications, which are steadily increasing in number, hearings were begun here on Sept. 3 on a tentative draft of new rules that will govern the storage and use of fuel oils and the construction and installation of oil-burning equipment.

The committee of operators and shippers appointed several months ago to revise the classifications of pool coals have nearly completed their work and a meeting will be held soon at which time the report of the committee will be considered. It is said there will be many changes in the present classifications.

The slackening up in buying did not cause any easing off in quotations. Dealers stood firm and although there were good tonnages of the fair coals on hand here there was no disposition to force its sale.

Lack of cars is coming to the front rapidly. Many complaints are heard and shippers believe they will increase as the season advances.

Dumpings of bituminous at the local railroad terminals during the week ended Aug. 29 were 5830 cars as compared with 5427 cars the week previous, an increase of 403 cars. There were 25,480 cars dumped here during the first 30 days of August as compared with 24,555 cars in July and 31,297 cars in August of 1918.

Quotations on the various pools range as follows: Pools 1 and 71, $5.85@6.10; Pool No. 9, $5.85@6.10; Pool No. 10, $5.75 @5.85; Pool No. 11, $5.50@5.65; Pool No. 18, $5.25@5.35.

Quotations for the various grade of coals, spot delivery, range about as follows:

	Spot
South Fork (best)	$3.25@$3.50
Cambria (best)	3.00@ 3.25
Cambria (ordinary)	2.70@ 2.90
Clearfield (best)	3.00@ 3.25
Clearfield (ordinary)	2.70@ 2.90
Reynoldsville	2.70@ 2.90
Quemahoning	3.25@ 3.50
Somerset (best)	3.00@ 3.25
Somerset (poor)	2.65@ 2.75
Western Maryland	2.50@ 2.75
Fairmont	2.35@ 2.50
Latrobe	2.60@ 2.65
Greensburg	2.50@ 2.60
Westmoreland, ¾ in.	3.50@ 3.75
Westmoreland run-of-mine	3.20@ 3.35

PHILADELPHIA

Anthracite trade stirred by early cool spell. Dealers urged for delivery. Small stocks on hand except pea. September prices in effect. Individuals make advances. Egg and stove lacking, nut nearly all gone, and pea being called for. Car supply good. Idle cars to be put back. Steam sizes due for early improvement. All collections satisfactory. Bituminous very active. Car shortage affects deliveries. Some prices increase. Some complaints of poor coal.

Anthracite—A sudden spell of cool weather, unusual for this time of the year, struck the city and made the people think of their coal needs. Most dealers in accepting new business are strictly insisting that the price shall be that when delivery is effected. On account of the early arrival of cool weather the dealers are considerably upset at conditions as they exist, as they felt certain they would receive good shipments of coal before now. There is no promise of relief for the immediate future, as with the holiday intervening this week the production is cut down just that much.

As to September prices, the companies strictly adhered to the policy as announced last May and added the final 10c. to the price at the mines, which now makes their winter schedule in effect presumably until Apr. 1 next. A number of individual shippers added advances of 25c. a ton, and the majority of them are now 75c. above company circular, with a few still higher than that. One large independent concern added 75c. for September, but as it had been selling at company prices all during August, this increase places them on the same level as the other independent shippers. It is not believed that the independents have reached the top as yet, for there is no doubt as the season advances and coal becomes more in demand they will make still further advances.

There is a never-ending cry for stove coal, and all summer long this has been partly met by the retailers persuading their customers to take nut in its place; but lately the call for chestnut has been so strong that even this size is becoming scarce. A few weeks ago it seemed likely that most dealers would be able to accumulate fair stocks of this latter size to carry them into the winter; now it would appear that this will not be possible. There has not been the slightest improvement in egg coal, either, and it is beginning to appear that it will be a difficult matter to fill all the orders for this size.

Pea continues to be quite plentiful, but as is always the case with the advent of cool weather, the first calls for coal were for this size. Of course, this was quite moderate and every dealer was able to take care of the demand, but it is only indica-

tive of what will happen when the weather becomes settled. One of the large companies reports considerable improvement in the call for pea, and in some instances has not filled all orders during the past week. With this in mind many of the individual shippers had seriously under consideration the plan of adding to the price of this size, and it would occasion no surprise if they increased the price of pea before the end of the month.

As yet there has been no particular trouble with the car supply at the mines, and the production has been keeping well up to that of the last normal year. Many dealers, however, do not hestiate to say that it is a mistake to compare this year to 1916, as this does not take into account the natural increase in consumption, nor the fact that this district still continues to house the greatly increased population brought here by war activities in the industrial plants. They admit that much coal is stored in the cellars, but it will still require a much greater tonnage than 1916 if this city is to be spared suffering from a shortage the coming winter. As to the car supply, so far there is a sufficient number to be had, but no dealer is in position to ask for any particular kind of equipment, although shippers try to avoid classes of cars which they know will give their customers added expense to unload. This, though, is becoming more difficult, as it is rumored the railroads are hard pressed as it is to give the mines the exact number of cars they want. It has been stated that it has been about decided to place in service the many wooden cars with a capacity from 25 to 28 tons which were taken out of service and stored along the sidings. One road has 3000 of such cars lying idle along its lines. While this would not help the production in any way, it would in a manner be an aid to the shippers in helping them to spread the production over a wider territory, as with the wooden cars it would mean practically two cars in place of one of the 50-ton capacity, for as one shipper said, "a car is a car whether it contains 25 tons or twice as much."

Taking the steam trade as a whole it can be said to be in good shape, with nearly all buckwheat coal being taken, and it is expected from this time onward that buckwheat will show gradually increasing strength. It is not believed it will be more than six weeks or two months before the storage yards will be called upon for this size. Rice and barley remain practically unchanged from the past two weeks, but there is no question that these sizes will also begin to show gains along with buckwheat, although it is not expected that there will be any shortage, due to the vast quantity in the storage yards, occupying spaces which in normal years have been taken up with prepared sizes.

Collections by the shippers and dealers are in fine shape. Very few report any outstanding accounts and such as do become overdue are quickly adjusted in a way which the shippers have in these times.

With the increase of 10c. per ton on Sept. 1 the prices per gross ton f. o. b. cars at mines for line shipment and f. o.b. Port Richmond, are as follows:

	Line	Tide		Line	Tide
Broken	$5.95	$7.80	Buckwheat	$3.40	$4.45
Egg	6.35	8.20	Rice	2.75	3.65
Stove	6.60	8.45	Boiler	2.50	3.50
Nut	6.70	8.55	Barley	2.25	3.15
Pea	5.30	6.90			

Bituminous—There is all kinds of activity in the trade, as car supply is making itself more and more felt. Many brokers who have made heavy commitments on the better coals are having difficulty in meeting their orders at this time. There have been quite a number of advances in the good coals, with contract customers calling on their shippers for full supplies. Many of the consumers feel they are being slighted since the market price has gone well beyond the contract figures and they are urging for full deliveries on their orders. Very much of this is brought about by the impending labor troubles on the railroads, with every one trying to stock up at the last minute. The only coals which have not been affected strongly by price changes are the Fairmont grades, but this is purely a local condition due to an embargo at the piers turning some of this coal loose on the spot market.

An unpleasant feature of the trade now cropping out is the increasing complaints of poor coal received from consumers who have taken a chance in buying unknown coals on the spot market. In some instances the complaints were due to coal shipped without preparation, and in others the fuel was from openings that never could find a market in ordinary times and have just recently opened up to take advantage of present conditions.

There continues to be a fair export business, and this week several good cargoes cleared for France and other transatlantic ports. However, there seems no immediate hope for increasing export business with ships so scarce. There is much business offering and such as has been accepted has been at good prices.

The prices per net ton ruling at this time are approximately as follows:

Georges Creek Big Vein	$3.40@3.55
South Fork Miller Vein	3.40@3.55
Clearfield (ordinary)	3.10@3.20
Somerset (ordinary)	3.00@3.15
Fairmont lump	3.25@3.35
Fairmont mine-run	3.10@3.20
Fairmont slack	2.50@2.65
Fairmont lump (ordinary)	2.90@3.00
Fairmont mine-run	2.70@2.80
Fairmont slack	2.50@2.65

BALTIMORE

A fair to good car supply sends through increased tonnage and eases off steam coal market. Heavy export demand holds up gas coals. Hard coal men in doubt as to September schedule.

Bituminous—From western Maryland, West Virginia and western Pennsylvania come reports of a much better car supply. Most of the mining regions say that the run is from fair to good; although there are still some complaints of shortage. The much improved run of coal to tide is having its effect on the market, especially as to steam coals. The domestic situation is not brisk by any means and the increased call for bunker coal is more than covered by the additional receipts. A very heavy export demand is holding up the gas-coal market as a whole, although even that is a little softer than the week previous by reason of the improved run of coal. The heavy export movement is shown by the fact that more than 72,000 tons was loaded for foreign account the week ending Aug. 23, and, while official figures are not available, it is probable that the August total loading will exceed that of July, when 258,495 tons was dumped over the piers here on foreign account, the largest total since June of 1915. At present the trade is simply flooded with foreign orders, the only hitch being in getting vessels promptly and the question of establishing credits. Prices to the trade at the mines are about as follows. Steam Coals—Best, $3.25@3.40; good, $2.90@3.00; fair, $2.50@2.75; poor, $2.35@2.40. Gas Coals—Best three-quarter, $3.50; medium sulphur, three-quarter, $2.60@2.75; run-of-mine, $2.40.

Anthracite—Just what price hard coal will bring in this locality through the month of September is uncertain. When the advance of 25c. a ton was made Aug. 1 the trade figured generally on the same rates for September. Now the constantly advancing premiums on independent coal combined with the fact that many dealers are not getting the proportion of one car of company coal to two of independent coal, as originally figured, is upsetting calculations. With independent premiums running from 75c. to $1, and even more asked at times, the trade claims that the gross margin of profit is now considerably belor the $2.50 allowed back in Fuel Administration control days. While there was some improvement in the run of company coal in August, the increase did not come up to expectations. It may be necessary to fix a new retail schedule during the month of September as a result of the conditions here.

Lake Markets

PITTSBURGH

Byproduct coal easier but still high. Steam and gas unchanged. Domestic demand slightly expanded.

The pressure for prompt lots of coal for byproduct coking has eased off in the past week, steam and gas coal are fully as strong as a week ago, and a little more demand is beginning to appear from retail dealers for domestic coal. There would probably be more demand for domestic coal from householders desiring to stock up against natural gas shortage in the winter were it not for the educational campaign the gas companies recently waged, urging that by the coöperation of the gas companies and the consumers a serious shortage could be averted. The aid of the consumers was to be along the line of installing the most economical gas-using appliances, while the aid the gas companies were to furnish was along the line of mixing manufactured gas with the natural product. The gas companies already have one gas-making plant in operation and promise others. The page advertisements carried in the daily newspapers did not mention the fact that the manufactured gas has less heat units per cubic foot than natural gas.

About ten days ago Connellsville coal for byproduct coking brought as high as $3, but in the past few days $2.85 has been the highest price obtainable even for small prompt lots. Pittsburgh district coal for byproduct work brings good prices but not altogether as high as commanded by Connellsville coal.

Coal shipments in the lake trade are gradually decreasing and the decrease will be more rapid in the next few weeks, affording a larger volume for the line trade. The market is quotable the same as last week, prices being as follows except for occasional premiums paid on small prompt lots: Steam slack, $1.90@2.10; gas slack, $2.15@2.40; steam mine-run, $2.35@2.60; gas mine-run, $2.75@3; ¾-in. gas, $2.90@3.20, per net ton at mine, Pittsburgh district.

TORONTO

Supplies still short of demand. Cool weather brings increased orders. Nut and egg substituted for stove coal. Serious car shortage feared. Bituminous demand light.

There is little change in market conditions. Supplies of anthracite coming in slowly and being still far short of requirements for filling orders in hand. The demand for anthracite shows some increase with the setting in of cool weather, which has rendered consumers anxious to secure their winter stocks.

Stove coal, being unprocurable except in cases where orders have been placed earlier in the season, egg and nut are being largly accepted as substitutes. The outlook as regards transportation facilities does not appear any too favorable, and dealers are disposed to anticipate that the difficulties due to car shortage will be greatly increased as soon as the movement of the Western crops has fairly set in. The call for bituminous continues light. Most consumers buying only for immediate requirements.

Quotations for short tons are as follows:

Retail	
Anthracite, egg, stove, nut and grate	$12.50
Pea	11.00
Bituminous steam	8.00
Slack	7.00
Domestic lump	10.00
Cannel	11.50
Wholesale f. o. b. cars at destination:	
Three-quarter lump	6.25
Slack	5.15

BUFFALO

Local bituminous prices still below Pittsburgh prices. Cars generally scarce. Demand not improving. Fair trade only. Anthracite moving slowly. Strike hurts lake trade.

Bituminous—The trade is still moderate. Shippers do not see any improvement in the demand and are afraid that it will not start up this fall, as it was confidently expected to do last spring. As time goes on the talk of a boom dies out. Really, nobody here is anxious to see a rapid trade, for that means always stagnation later on. What all would be glad to see is a steady trade, about such as we have now, with all markets on a level and nobody trying to boom the situation.

The car supply continues to run down. A few shippers find it adequate, but they are especially favorably situated in some way and are quite the exception. It is feared that when the fall grain movement is on, the shortage will make it hard to supply consumers at all promptly, if at all, yet the consumers will not heed the warning, and refuse to stock up. They are looking for Government interference, if prices go higher, and think they are safe.

Visitors to Pittsburgh find the trade there more or less excited, with shippers trying to shove prices up. The export trade is looked on there as sure to create a scarcity of coal if the car shortage does not. Slack is higher than it was, and all sizes are also strong, with mine-run about out of the market.

The quotations given out by the Buffalo trade are as follows: $4.55 for Allegheny Valley sizes, $4.80 for Pittsburgh lump, $4.65 for same three-quarter, $4.20 for mine-run and $4.10 for slack, with $4.60 for smokeless and $5.60 for Pennsylvania smithing, all per net ton, f.o.b. Buffalo.

Anthracite—The supply does not improve; the demand incresaes. Several days of cool weather have added to the rush for coal, but the distributors are able to report a supply only about every other day. It

does not look now as though the situation was going to change right away, if at all, which means that the clamor for coal will go on all winter and yield only to the sunny days of early spring. At the same time it may happen that the supply will be sufficient to meet all real needs. Whether people are hoarding more coal than they need is doubtful; and if they are the demand will slowly run down, as one after another gets a supply.

The failure of independent anthracite to come this way as it used to is much regretted. None of the jobbers has been able to get any of account this season, so it is supposed that it finds an easier market in the East than in this direction. This reduces western tonnage materially.

Naturally the lake trade falls off, as the strike of sailors and handlers at Duluth and Superior has tied up all the coal cargoes going there of late and shut up these ports to the trade. At last accounts the iron ore handlers have returned to work, but the coal handlers have not. Loading of anthracite here in the lake trade was only 89,300 net tons, of which 28,100 tons cleared for Chicago, 17,800 tons for Milwaukee, 14,600 tons for Green Bay, 1000 tons for Pt. Arthur, 7800 tons for Sheboygan, 7000 tons for Waukegan, 3000 tons for Ft. William and 1000 tons for Hancock.

CLEVELAND

Operators continue to be hard pressed for supplies. Car supply at southern and eastern Ohio mines is slightly improved, but production seems not to have moved upward with the additional cars provided by the carriers. The lake trade is about normal again.

Bituminous—Labor troubles appear to have been practically entirely eliminated in northern Ohio, and coal consumption is reported to be at the highest point now of any period since the peak of war activity. Some operators believe steam coal just now is being consumed faster than it is being delivered—a condition far from normal for the early fall. Just what continuation of this condition into the winter, with its added transportation and mining difficulties, will bring forth operators hesitate to predict. Most of them expect to see prices go rocketing despite present agitation and efforts to keep commodity costs down.

For a reason operators say is entirely unknown to them, the supply of cars at southern and eastern Ohio mines has been much improved the past few days. Production, however, has not been increased proportionately, due to the unrest among mine labor. With demand in the district as high as ever, prices on all grades of steam coal have been advanced 5 to 10c. a ton. Consumers now are not bickering over prices, and appear to be glad to get supplies.

Talk that United Mine Workers at their convention in Cleveland will demand nationalization of the industry appears not to be causing much alarm here. Just where the proposed 30-hour week will lead to operators profess to be ignorant, but sentiment among the mine owners is unanimous that such a demand is beyond all reason. Several say nationalization is preferable to the lot of a mine operator working a 30-hour week and attempting to keep prices on a reasonable level.

Prices of coal per net ton delivered in Cleveland are:

Anthracite:	
Egg	$11.35@11.80
Chestnut	11.65@11.90
Grate	11.45@11.75
Stove	11.55@11.80
Pocahontas:	
Forked	9.50@9.75
Lump	8.75@9.00
Mine-run	7.50
Domestic bituminous:	
West Virginia splint	8.00@8.25
No. 8 Pittsburgh	6 60@6.90
Massillon lump	7.60@7.95
Steam coal:	
No. 6 slack	4.60@4 80
No. 8 slack	5.10@5.50
Youghiogheny slack	5.25@5.50
No. 8 1-in. lump	5.70@6.00
No. 6 mine-run	4.75@5.00
No. 8 mine-run	5.20@5.45

Pocahontas and Anthracite—Dealers have been receiving a little more Pocahontas than usual the past few days, but the supply continues far inadequate. Most dealers claim to be getting not over 15 per cent. of their requirements, and are five to six weeks behind on deliveries. Prices are unchanged, but firm.

Lake Trade—With the upper lake coal docks again in practically full operation, the bituminous coal end of the lake trade is back in full swing. But even now that shipments have been resumed and vessel tonnage is plentiful, for the time being, the demand is not what would be expected for early fall. Efforts to move coal off the upper lake docks have largely been failures. With iron ore in as light demand at the lower lakes as coal is at the upper lakes, the movement in November may be negligible, with December entirely out, some operators say.

DETROIT

Sales of bituminous have not yet attained the volume that jobbers say is necessary to assure adequate winter supply.

Bituminous—Though considerable business is being handled in steam and domestic bituminous in the local market, the aggregate should be made materially greater, the jobbers say, to make certain that the requirements of all consumers will be adequately supplied. The steam-coal trade is still reflecting the dilatory policy of a number of the manufacturing plants and other consumers.

Some of the jobbers say that despite the seeming indifference here, they are placing about all the coal they can obtain with customers elsewhere. They are inclined to lay stress on the fact that those of the local users of steam coal who encounter difficulty in meeting their requirements at a later date will have only themselves to blame.

It is a matter of comment also, that the transportation situation seems to be gradually developing a condition of troublesome car shortage, especially in the West Virginia and Kentucky districts from which Detroit draws a large proportion of its supply of the better grades of coal.

As most of the business is now transacted in shipments direct to the consumer from the mines, there is no great amount of unsold coal on tracks, such coal apparently having little influence as a market factor. Smokeless is in very limited supply. Mine-run is reported selling on the basis of $3.60 per net ton, f.o.b. mines. Hocking domestic lump is held at $3, with nut bringing from $2.50 to $2.75, mine-run about $2.25 and slack $1.60 to $1.75. West Virginia four-inch lump of good quality is quoted at $3.50, while the two-inch lump ranges from $3.25 to $3.50. Mine-run is offered at $2.75 and slack sells at $2.25 to $2.50.

Anthracite—Household consumers of anthracite are not crowding into the market, though dealers believe a considerable amount of the winter fuel supply has been distributed. Stocks in dealers' yards are low and are not being replenished as promptly as the dealers would desire. The mines, they say, are slow in filling orders and there is much complaint about shipments delayed in transit. Several large retail dealers are following the policy of declining to book orders that they are unable to fill from stock.

COLUMBUS

The Ohio coal trade exhibits considerable strength in every department. Buying on the part of retailers and steam users is rather brisk. Production is considerably curtailed by the increasing car shortage.

While more uniform prices are prevailing, there is no lack of strength and a considerable volume of business is reported on all sides. The worst factor is the growing car shortage, which is reducing the output in all fields and is causing some uneasiness among large consumers. All roads are now suffering from lack of equipment, and it is estimated that no district has more than 50 per cent supply. This condition is causing a much stronger demand for steam sizes, and buying is active. Purchasers generally are asking for immediate shipment as the coal is needed in the near future.

The eastern Ohio field is probably in the worst shape as regards car supply, with only about 40 per cent. of needs supplied. Pomeroy Bend and the Hocking Valley are also suffering. On the Toledo & Ohio Central, Zanesville & Western and Kanawha & Michigan the shortage has reached an acute stage. Other fields have their production curtailed to a low point and no immediate relief is in sight.

Domestic business is active in all sections. Retailers are generally short of stocks and are ordering whenever delivery can be assured. Pocahontas and West Virginia splints are quite scarce and prices are ranging high. Hocking lump is now being brought into its own, and a considerable tonnage is moving for domestic use. Pocahontas lump, when it can be secured, is retailing at $7.50 and mine-run at $7. Splints are between $6.50 and $6.75, while Kentucky grades are at the same levels. Hocking Lump is selling between $5.75 and $6.

Steam business is showing marked strength, which is something different from the tone of the trade some time back. Screenings are stronger and prices at the mines range up to $2 and sometimes even higher. Hocking lump is selling at $3.25 to $3.50 for large sizes and $3 to $3.25 for 1¼ in. Mine-run is quoted between $2.10 and $2.50. Reserve stocks in the hands of the larger steam users are not large, and some are concerned as to future supply. Some shutting off in demand, due to strikes, is reported, but generally speaking the demand is strong.

The lake trade is slowing down under the influence of car shortage. Loadings at the various lower lake ports are now as large as formerly, and with a fair tonnage yet to be moved it appears that the trade will run later than was expected. The interior movement off the upper lake docks is reported as improved.

CINCINNATI

Demand for coal is now so urgent that dealers find it impossible to supply their customers' needs. Many grades now high in price. Railroads confiscating coal.

No improvement has been noticed in the coal-car situation in this territory, conditions on the L. & N., C. & O., N. & W. and the Southern being anything but pleasing. With the car shortage coming on top of the unprecedented demand from all sides, operators and dealers in this section see little hope of the situation clearing up in the very near future. The demand is such that it is next to impossible to supply it.

The situation among the local retail dealers is serious. The domestic trade, which would not hearken to the pleas of the coal men in the early spring and summer is at last awakening to the seriousness of the situation, and as a consequence the demand upon the retail dealers has become tremendous.

About the only thing that keeps the retailers in business right now is the fact that they can get some small shipments which they manage to divide equally enough among their patrons to satisfy them for the present at least. With all dealers doing the same thing and adding their excuses of all kinds, things manage to keep moving, but for how long nobody knows.

Many of the companies have withdrawn from the market. The highest grades of Kentucky and West Virginia block have gone so high that they no longer are quoted. Most companies quote mine-run at $2.25, but have none for sale. West Virginia block sold by one company at $4.40, although the average is about $4.25.

There is much complaint from the operators along the N. & W. that the railway is confiscating every pound of nut and slack produced along the line, causing, they say, the increases on nut and slack and mine run. Industries of all kinds are clamoring for coal to continue operations, but with the car shortage, labor difficulties and what not, the chances of getting full supplies right now are mighty slim.

LOUISVILLE

Establishment of maximum prices by mine operators principal feature of the week. Two-day production and heavy demand resulting in mines being oversold and withdrawing from market.

A number of the reputable coal mine operators of eastern Kentucky, especially in the Harlan district, have taken the bull by the horns, so to speak, and have announced that they would sell no more coal of any grade for the present at more than $4 per ton at mine. Coal had been advancing until it was worth $4,50 to $5 at many mines, with some operators planning to go over the $5 mark in September. However, two-day operations, due to shortage of cars, resulted in a better demand for such steam sizes as is produced at higher prices, and the operators decided that in view of the stronger steam prices they could hold block coal prices down to $4, which is the maximum for all grades.

However, this is not helping the retailer or consumer much, as the mines for the most part are oversold, and are delivering on old orders and contracts. New business taken will be at $4, and an effort will be made to take care of old customers. This reduction was not entirely due to philanthropic motives, but partly due to the fact that coals from other sections were coming in at lower prices and shoving eastern Kentucky out of certain markets, Louisville being one of them. Due to the fact that West Virginia pool territory mines are getting a larger car supply than eastern Kentucky and Tennessee, there has been a

good deal of West Virginia coal coming on the market at around $3.50 per ton at mine. These car pool mines have been seeking markets, whereas the eastern Kentucky mines have been staving off business as they could not take care of it. In reducing prices and then refusing to take business that they cannot fill, they cannot be charged with hogging prices. The situation is about the same and prices were really advanced to stave off business, but resulted in the operator being condemned.

Jobbers are getting all that the market will stand, and that is a price of $5@5.25 for block coal in some instances. A few operators in eastern Kentucky are still asking high prices, but while there is no signed agreement and hardly a gentleman's agreement, the larger operators are determined not to be responsible for high prices, or accept the blame.

In a retail way the situation is distressing. Retailers have delivered a good deal of coal, and there is still a fair demand, but prices are out of line. One operator, who is selling coal through a mine-owned-retailing company in Louisville, has refused to raise prices, with the result that retailers are selling coal that cost them $4.50 a ton at $7 a ton, after paying $1.60 freight and war tax, and making deliveries, etc. They are losing money on every ton delivered. Some of the leading retailers claim that they haven't any coal in their yards, and that they should have a 5,000 to 10,000 ton stock. This will mean trouble in the dead of winter, but conditions are unsettled and retailers are afraid that the Government may take control and force prices down again, which would catch the retailer with a large stock of coal on hand, bought at far above the old Government level.

However, a few retailers claim that they will advance prices all around by 50c. a ton within the next ten days, and will let coal stock on their yards before they will sell it for less, as they will stand a chance of selling it at a profit next winter.

BIRMINGHAM

With a slightly better car supply coal is moving better than last week, but there is no material improvement in demand for steam. Domestic continues strong, there being practically no free coal to be had.

Aside from a somewhat better supply of equipment for moving coal from the mines, there is practically no change in conditions in this district. High-grade steam coal, such as Pratt, Black Creek, Cahaba and the like, is being taken up to the limit of production at the mines, but the medium and lower grades are dragging on the market and hard to dispose of. Pratt mine-run is quoted at $2.85@3.00; Black Creek and Cahaba $3.25@3.45, Big Seam $2.25-@2.60.

It is almost impossible to buy a car of lump or nut coal in the district, the mines being pressed under present operating conditions to take care of contract customers and are unable to produce any free coal. Almost any price could be obtained by the producer having any of the domestic grades to offer in the spot market.

Mines in the district are not obtaining over a 60 per cent. car supply, and according to the prediction of Regional Director Winchell this percentage is not likely to be exceeded in the near future. Mr. Winchell is exercising every effort to maintain an equitable distribution of coal-car equipment in this and other southern producing centers, it being asserted that there are as many coal cars in the southern fields as there were a year ago, when production in this district was practically twice the tonnage that is being mined now. Faulty distribution and the diversion of coal-carrying equipment for other classes of freight is thought to be the principal trouble.

The Railroad Administration has published rates via the Warrior River to New Orleans and Mobile, which are 20 per cent. less than the all-rail rate, being $1.60 to New Orleans and $1.28 to Mobile. Some mines in the Warrior field will be greatly benefited by the reduced rate provided by water transportation.

Coke

CONNELLSVILLE

Advanced market well held, but turnover now light. No more ratio contracts.

The coke market has been relatively quiet in the past week as to actual turnover, but the advanced prices attained more than a week ago have easily been held. Spot and prompt furnace coke standing at $4.75, against $4 or less prior to a fortnight ago. The heavy buying demand that absorbed the rather large tonnage of coke standing on track seemed to disappear contemporaneously with the much higher asking prices that developed promptly upon the surplus being absorbed, but on the other hand operators seem to have had difficulty in maintaining production at rates necessary to take care of contracts and thus no surplus has developed. Such a surplus might have depressed prices, for the coke market is always very sensitive to slight differences between demand and supply. The operators feel, of course, that they are easily entitled to $4.75 for coke, when Connellsville coal for byproduct coking recently brought as high as $3, and now commands prices up to about $2.85, but they do not seem to give full weight to one factor, which is that while coke cars are in moderately good supply coal cars, particularly for the Connellsville region, are very scarce. Some brokers assert that it is car shortage, and nothing else, that makes Connellsville coal bring what it does.

It has become clear that the Connellsville coke operators exercised poor judgment when they sold large quantities of coke on contract for the present half year on a ratio basis, relative to pig iron. They expected pig iron to advance, while the furnaces had their doubts and were therefore quite willing to buy coke on the basis of the price being settled each month at 6½ net tons of coke at ovens to one gross ton of basic pig iron at valley furnaces. Pig iron has stayed at $25.75 and coke under such contracts has therefore stayed at $4.12. If the coke operators had been bullish on coal, which they ought to know more about, instead of being bullish on pig iron, they would have fared better. They would not think now of selling coke for the remainder of the year on a ratio basis, but there is hardly any demand since the furnaces now idle are disposed to wait for more settled industrial conditions, particularly as to labor, before they think of blowing in.

Foundry coke continues very strong, with a moderate demand for spot and prompt lots and relatively light offerings. We quote spot or prompt furnace coke at $4.75 and spot or prompt foundry coke at $5.50@6.25, depending on brand, per net ton at ovens.

The "Courier" reports production in the Connellsville and Lower Connellsville region in the week ended Aug. 23 at 240,440 tons, an increase of 4258 tons.

Buffalo—The trade is quiet. Furnaces are running at about normal speed, but they are not buying liberally, as the future of the iron trade must be cleared up somewhat before much venturing is indulged in. The prices remain as before, as they are based on coal, as follows: 72-hour Connellsville foundry, $7.60; 48-hour furnace, $7.25; off grades, $7; domestic sizes, $6.75; breeze, $5.75. The movement of iron ore has been much interrupted by the handlers' strike, so that during the past week only two cargoes have arrived here of the 13,100 gross tons total.

Middle West

MILWAUKEE

Coal market extremely quiet, with cargo arrivals slow, on account of the Lake Superior dock strike.

The coal market is extremely quiet at present. There is little animation at the docks, as cargo arrivals are at a low ebb on account of the strike at the iron ore docks, which ties up carriers. A rush is expected, however, when the ore traffic is resumed. There is room for improvement in the demand for soft coal from the interior. Docks are piled high and a better outer movement would be welcomed. Scarcity of popular household grades of anthracite and bituminous hampers small dealers, and city deliveries are sluggish. Receipts by lake thus far aggregate 519,364 tons of anthracite and 1,898,129 tons of soft coal. Anthracite leads last year by 146,048 tons, but bituminous receipts are now 52,234 tons behind 1918.

A municipal coal plant has been established at Eau Claire, Wis. The domestic grades of hard and soft coal will be handled at as near cost as is possible.

ST. LOUIS

Strikes in the Standard and Mt. Olive fields attaining serious proportions. Rebellious miners threatening workers and closing mines. Very little coal on the market and demand extremely easy. Country call light. Signs of impending shortage serious.

The situation in the St. Louis market is unchanged as far as the supply of coal from the Standard and Mt. Olive fields is concerned. The early part of the week, as different mines resumed operations and it was found that the strike leaders were not permitted to work, a new series of strikes took place. At other mines, because the fines were not to be remitted, the miners went out. Toward the end of the week these elements by main strength and threats closed down several other mines in both fields. On Wednesday and Thursday they marched in bodies of from 200 to 400 strong to the mines that were ready to work and prevented the miners from going down, and at other mines they stood guard until the men came up in the evening and threatened them if they resumed work the next morning. In the Standard field they called out several engineers, firemen and pumpmen, and the mines are filling up with water. The workers are more rebellious now than at any previous time against the officials of the state organization.

It is evident that some of these miners at no time since they went on strike made up their minds to resume work. The radical element around Belleville is opposed to working until the general conference between the operators and the miners takes place in Cleveland, and believe the mines should be shut down until that time. Furthermore, the trouble makers have threatened that there will be a disruption of the state organization if Farrington and his followers are to hold office. It is the most critical time that the Illinois organization has ever faced, and it is going to take an extremely strong man to master the situation. It will call for the expulsion from the Illinois fields of the Sobialists or Bolshevik members of that organization.

The peaceably inclined miners in the Standard and Mt. Olive districts are afraid to go to work. They are even afraid to voice their sentiments in their local meetings.

A few mines in the Mt. Olive field managed to continue work, and in the Standard field a few of them were working until the close of the week, but the strikers openly boasted that these mines would be idle the coming week if they had to use force to compel idleness.

This strike, however, is not likely to touch the lower Illinois fields at all. It will be confined to the Standard and Mt. Olive fields, and possibly Springfield, where some of the miners are on strike now.

Even with the few mines that are working in the Standard district, the Illinois Central is unable to give them equipment to work every day. The incompetent manner in which this railroad is being handled would discredit any national government supervision. The public in the Middle West, after watching the railroads in the Illinois coal fields, are fully satisfied that the Government cannot take over any kind of an industry and manage it properly.

The demand is easy locally for domestic coal, with very little call for anything. The steam demand is also light. Most of the plants are using up their storage supply. The call from the country for domestic coal is good, but it is in vain. Country steam coal is easy, except from the south.

There is no change in the price in the Mt. Olive field, although Standard, the little that could be obtained, was selling as high as $2.75 for 2-in. lump and $3 for the 6-in lump, with screenings from $2 to $2.25.

In the Carterville field of Williamson and Franklin Counties the only trouble has been the lack of cars. Some mines have been working one day a week on the Iron Mountain. The other mines that had equipment were compelled to load railroad coal. The railroads had ample time in the summer months to store coal, but they did not do it. Now the Government gives the railroads the right to confiscate coal or to refuse cars to a mine unless the mine agrees to load railroad coal.

The service on the Iron Mountain is extremely bad. It does not, however, begin to compare with the Illinois Central. The Burlington and the Chicago & Eastern Illinois are giving good car supply and fairly good service.

The tonnage at all mines is light on account of lack of labor, and no mine in the field is working full time, even at the mines that have four roads. The railroad tonnage is extremely heavy.

There is a market for everything produced at the circular price, even with the independents.

In the Du Quoin field similar conditions exist, except that the mines get very little working time, being exclusively on the Illinois Central rail.

There is practically no anthracite coming into St. Louis and no orders are taken for future shipment. Smokeless is cut off altogether.